The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The MINING JOURNAL is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

No. 2128.—VOL. XLVI. LONDON, SATURDAY, JUNE 3, 1876. [WITH SUPPLEMENT.] {PRICE ..... SIXPENCE. PER ANNUM, BY POST, £1 4s.

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berdaunant, 15s.	30 Flagstaff, £2 3s. 9d.	25 Pennerley, £2 12s. 6d.
lmada, 9s. 6d.	50 Frontino, £2 6s. 3d.	30 Port Nigel.
sheton, 28s. 9d.	25 Glyn, £3 8s. 9d.	5 Roman Gravels, £15½
irdseye.	15 Great West Van, 10s 9	100 Rookhope, 20s. 6d.
oy, 2s. 6d.	Great Laxey, £17½.	10 Richmond.
lue Tent.	10 Glenroy.	15 Santa Barbara.
olorado, 26s. 3d.	15 I. X. L., 22s. 6d.	50 So. Rom. Grav., 17s 6d
kemore, £3.	50 Javali, 7s. 6d.	25 Tankerville.
apel House.	30 Ladywell.	10 Tecoma, 13s. 9d.
rdiff & Swan., £2¾	20 Llanrwst, 37s. 6d.	15 Van, £39½.
(£9 paid.)	20 Marbella, £2¾.	45 Van Consols, £2 3s. 9d
e Hill, 2s.	25 Marke Valley, £1 18 9	25 W. Tankerville, £2 1 3
ontales, 7s. 9d.	North Laxey, 21s.	20 ditto (pref.)
thedral, 25s.	30 Old Treburgett, 8s. 9d.	40 West Assheton, £2.
t Van, £10¼.	50 Penstruthal.	10 West Chiverton.
st Caradon, £1⅜.	50 Plynlimmon, 10s.	15 West Pateley Bridge.
nma, £1 3s. 9d.	25 Parys Mountain, 19s.	30 Wheal Grenville.

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dar Creek, 13s. 6d.	30 Monydd Gorddu, 38s.	15 Sweetland Creek.
hapel House.	25 Marke Valley, £2½.	5 Tankerville, £10½.
xchequer, £2 2s.	40 North Laxey, 21s.	25 Van Consols, £2.
berhardt, £7¾.	10 Pateley Bridge, £4¼.	20 Wheal Crebor.
ast Van, £10½.	30 Parys Mountain.	10 West Assheton, £1½.
lyn, £3 1-16th.	20 Pennerley, £2 6s. 3d.	25 W. Tankerville, £2 1 9

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apel House, £3.	60 I. X. L., 21s. 3d.	Pennerley, £2 6s.
ontales, 8s. 3d.	75 Javali, 8s. 3d.	Parys Mount., 18s. 9d.
on Pedro, 7s. 9d.	40 Last Chance, 13s. 9d.	Rossa Grande, 2s.
st Van, £10.	25 Ladywell, 28s.	Rookhope, 20s. 6d.
xchequer, 40s.	30 Marke Valley, 40s.	San Pedro, £1⅝.
berhardt, £7⅞.	40 North Laxey, 20s.	Santa Barbara, 32s.
enroy, £7¼.	20 Pateley Bridge, £4.	Van Consols, £2⅛.
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Assheton	£ 1⅛	£ 1⅜	Penstruthal	13s.	15s.
Bog	2s.	3s.	Plynlimmon	10s.	11s.
Birdseye Creek	1¼	1⅜	Port Nigel	1¼	1¾
Carn Brea	35	36	Richmond	8⅛	8¼
Chapel House	2¾	3	Roman Gravels	15	15¼
Devon Great Consols	3	3½	Rookhope	20s.	22s.
Eberhardt	7½	7¾	Rossa Grande	1s. 3d.	1s. 9d.
East Caradon	1¼	1½	Santa Barbara	1½	1¾
East Van	9½	10	San Pedro	1⅜	1⅝
Exchequer Gold	1⅞	2	South Condurrow	4½	5
Flagstaff	2	2¼	Sweetland Creek	1⅜	1⅞
Glenroy	6	6½	Tankerville	10½	10¾
Glyn	3	3¼	Tincroft	18½	19
Great Laxey	17	17½	Unity Wood	1⅜	1¾
Great West Van	10s.	11s.	Van	37	38
Hingston Down	15s.	17s. 6d.	Van Consols	1¾	2¼
Ladywell	1¼	1½	West Chiverton	16½	17½
Marke Valley	1¼	1½	West Tankerville	1⅞	2
North Laxey	19s.	20s.	Wheal Crebor	1¾	2¼
New Quebrada	3½	3¾	Wheal Grenville	1½	1⅝
Parys Mountain	17s.	18s.	Wh. Kitty (St. Agnes)	2⅜	2⅞
Pateley Bridge	3½	4			

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Great West Van.	Plylimmon.	Cedar Creek.
West Pateley Bridge.	Old Treburgett.	Chontales.
Llanrwst.	Parys Mountain.	Malpaso.
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40 Pennerley, 45s.	45 Rookhope, 21s. 6d.	40 Flagstaff, 46s. 3d.
30 W. Tankerville, 40s.	50 Parys Mount., 18s.	30 Exchequer, 39s.
20 Glyn, £3 1s. 3d.	30 Van Consols, 38s. 6d.	60 I. X. L., 21s. 9d.
50 Nth. Laxey, 20s. 6d.	60 Penstruthal, 15s.	40 San Pedro, 30s.
35 Ladywell, 27s. 6d.	20 Marke Valley, 41s. 3d.	50 Frontino, 46s. 3d.
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Cathedral (New issue)	29s.	31s.	Roman Gravels	£ 15	£ 15½
Devon Great Consols	3¼	3½	Richmond	7¾	8
Eberhardt	7⅜	8	South Condurrow	3¼	3½
East Van	9¾	10	Tankerville	10¼	10⅝
Emma	1	1¼	Temple	2	2¼
Glyn	3⅛	3⅜	Tincroft	18¾	18¾
Great Laxey	16¾	17¼	Van	39¼	39½
Great West Van	10s.	12s.	Van Consols	2	2¼
North Laxey	19s. 6d.	20s. 6d.	West Assheton	1¾	2
Parys Mountain	16s.	18s.	West Chiverton	16½	17
Pateley Bridge	3¾	4¼	Wheal Kitty	1⅝	1⅞
Pennerley	2¼	2⅜	West Pateley Bridge	4¼	4¾

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30 Argentine, £5¾.	20 Grogwinion, £5¾.	San Pedro, £1 13s. 9d.
80 Birdseye, £1 7s. 6d.	75 Javali, 7s.	So. Condurrow, £4½.
75 Cedar Creek, 12s. 6d.	Ladywell, 28s.	St. Patrick.
60 Chapel House, £2 18 9	Marke Valley, £2.	Sweetland, £13¼.
3 Carn Brea, £36.	North Laxey, 20s.	Tankerville, £10½.
50 Colorado, £1 7s. 6d.	Oregon, £4½.	Tincroft, £18.
20 Eberhardt, £7 13s. 9d.	Parys Mount., 19s.	Van, £37.
30 East Caradon, £1¼.	Pateley Bridge, £4½.	Van Consols, £2.
50 Exchequer, £2.	Pennant.	W. Tankerville, £2.
15 East Van, £9½.	Pennerley, £2¾.	Wheal Crebor.
20 Glyn, £2 17s. 6d.	Rookhope, 22s.	Wh. Grenville, 22s. 6d

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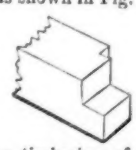
Royal School of Mines.

PROF. SMYTH'S LECTURES ON MINING—No. XXX.

[BY OUR SPECIAL REPORTER.]

As to the method of securing shafts, timber is that which is generally adopted in the first instance. If a shaft is only to serve a temporary purpose then, of course, nothing more than timber will be used; on the other hand, it may be that when timber is used in the first instance it is with the intention that as soon as we have reached a firm foundation some other means of securing the shaft will be adopted. If the ground be of a bad or running character it may be impossible to use any of the methods to be described in the present lecture. In small shafts, where the area exposed to pressure is not considerable, very slight frames may be often sufficient to keep open the shaft, with the assistance, it may be, of planks or laths behind. In some cases what is called casing is carried out—by the application of thick planks specially cut for the purpose; and of this you cannot see better examples than are presented in military mining. It is usually effected by placing a frame of timber at the surface, to which the subordinate frames are suspended by ropes, chains, iron bars, or strips of wood. Thus, if we take a shaft about 4 ft. 6 in. square we shall have a frame of pieces of timber intersecting one another, held by notches where they cross, and with the ends projecting to a distance of 12 or 13 in., or more, and this frame may conveniently be held in its place by pickets. This will form the upper or day frame, having a hold on the surface of the ground. Then we should be able to dig down a small distance, commonly about 3 ft., before it became necessary to put in a second frame. This second frame would be of much the same character as the first, only without the projecting ends, and would be stripped on to the first by means of wooden strips, or laths. Usually it is desirable that laths should be put down at the four sides of the frame; these will be driven outwards at an angle, the pressure of the ground gradually forcing them up to the frame. It is usual in these shafts to retain a little extra height for the purpose of giving a little tipping piece, so the laths will be left up above the day frame, and another frame above that may be required. In cases of opening shafts of considerable section, the pressure from the sides will be almost immediately sufficient to keep the successive frames in order, so that in this kind of work very little attention is paid to the stringing of the frames together. Another variety used in military mining, and repeated also in the small shafts of the hematite districts and of the Australian gold diggings, has a kind of lagging, to represent the casing, which is carried out with thick planks, 2 to 2½ in.

For the method of casing, stout planks 10 to 11 in. wide are taken; these are slightly winged, or a small piece is taken out of the side of one and checked to the thickness of the other, so that they fit together. In this way a frame is made up, and these frames may be placed at distances equal to the breadth of the planks in ordinary ground, in bad ground closer together, while in running sand they have to be placed quite close to one another. In some of the Scotch coal districts pits 14 to 20 ft. long are protected in a somewhat similar manner, by means of barring, where planks of about 4 in. thick are made up into frames, but are checked only to a small depth, usually only ½ in., just so as to make a joint, and then the angles strengthened by means of corner pieces. The most usual methods found necessary in metal mining have adhered more or less closely to this character—frames placed at distances asunder according to the nature of the ground, and kept apart vertically, partly by the pressure of the ground, in other cases by small props, or studdles, placed between the frames. A plan used in the North of England, one which the lecturer did not think was altogether well to be adopted, consisted in having two longitudinal pieces of timber kept asunder by means of struts, one end of the strut being cut to a point, which was received in a mortice in the timber. If for no other reason, the plan was objectionable for this, that it impaired the strength of the timber. The other end of the strut is driven in between the pieces, and so wedged. With this method of timbering accidents have taken place from time to time in the district of Whitehaven, since if the ground be worked away below to a considerable extent, or if anything can fall away from behind the frames, so as to leave large open spaces, there is a considerable risk of the whole dropping away from one joint. This can be prevented to a great extent by the simple plan of putting in the corner pieces of different lengths, so that the joints may not occur together. The more usual method is to have the frames pierced together by taking off half the thickness, whether with round or square timber. In the ordinary timbering of mines it becomes an important matter to see that the timber is efficiently supported, even when carried down only to a few feet. On getting down to the ground which you consider sufficiently secure, transverse beams will be put in as bearers; sometimes being inserted into the ground on both sides of the shaft. Usually, when the sides are horizontal or vertical, the timber is brought down into its place by means of a notch; in other cases, especially in inclined shafts, a hitch will be cut at one end only, and the other end brought down in the manner of the stull pieces. Then most frequently a frame of four timbers will be placed on the bearers, and at the corners over the joints studdles, or struts, will be put in; and if the shaft be of extra length another pair of studdles may be placed in the middle. These struts will usually be from 10 to 12 ft. long, then another frame will be laid on these, and thus timbering of a more permanent character will be obtained. The first timber will be removed upwards, and then planks will be driven in around the new frames, and any small spaces be filled up with wood or stone, so as to prevent any possibility of the framework falling back out of position. The joints used in Cornwall are of a very excellent character; they give more trouble in cutting, but are very firm. One is shown in Fig. 30.



In our own country the timbering of the circular shafts of the collieries is of much the same character as that described above. If the ground is of broken stone or gravel the struts may have to be very short, and in fact where you have watery ground, or very loose sand, it will be necessary to put down one frame close on the other, and then the timbering comes to look very much like the lagging used in Scotch mines, but it is of a much stouter character. Some of the most remarkable timbering of late years is that introduced in the Comstock district, where the shafts in some instances have been attempted to be carried through the body of the lode, and maintained there in the midst of a mass of loose material, and where no expense has been spared in some cases to introduce timber of great size and strength, rendered necessary by the great dimensions of the shafts. The plan of one of these shafts is very instructive in this point of view. Take a shaft of 24 ft. long, fitted with timber 8 to 14 in. square, having 3-in. planks driven behind the frames all round the sides, forming what we call lagging. The length of the shaft is divided up into convenient compartments by means of props, which are of very great importance in preventing the sides from collapsing under the great lateral pressure. These props are generally placed in steps, two props to each principal frame; they are very important also for the attachment of the guides for drawing. This has generally been carried out with round timber, in some mines 14-in. square timber has been used. In certain mines this timbering has collapsed, and it has been necessary after a very short time to take it out, and replace the sets in close proximity to one another.

Where the sand is very loose, or the strata very watery, methods have to be adopted which come very near to those of tubbing, a subject we shall have to consider in a subsequent lecture. In general they will consist of putting down the latter more carefully than usual, and in filling up the space behind the laths with brushwood. In the Bolgen or wall-post method, used on the Continent, longitudinal pieces or wall plates are put in, and kept open by transverse pieces, and in addition by a strong frame at each extremity, the length of this timbering being from 1 to 2½ fms. The whole structure consists of a pair of very strong bearers, generally placed in a hitch in the ground at one end, and the other either abutted against the firm rock, or against a head piece if needed. In each angle is placed a strong piece as an upright, and these are kept asunder by struts for the time being, till the whole framing is complete. Above the bearer will be placed a quantity of round timber, or if frames are resorted to it may be a series of successive frames, or sets with struts between them, much in the same manner as in the former arrangements. For keeping all these in place the corner pieces, or principals, are strutted, another set of bearers are put in above, and the two, wedged by transvers struts, made to fit over the round timber, and well driven in on it. Inclined struts are prefered to those set at right angles, since a small settlement of the ground does not throw them out of place. This method is used in spite of the great quantity of timber needed, where the ground is very heavy, as in the Harz. Generally speaking, with regard to the timbering of shafts the prime cost of the timber, and then the maintenance, is so important that in different districts a great many devices have been followed in the attempt to economise. The cost of cutting and suitably fixing is very great in the first instance; then there is the effect of the atmosphere, so that one finds in certain mines, and in certain parts of mines, the timber is rapidly affected by dry rot. This dry rot will generally be found associated with a heavy atmosphere and a great degree of warmth. It cannot always be detected on the surface, but the timber requires to be scooped, or tested by the hammer, hence it is very important that this test should be occasionally employed. When decomposition of mineral substances is going on very rapidly in the mines the timber should be protected by better ventilation than usual. Where you have a fresh atmosphere, and water tickling down, the timber may last for a long time. In some mines in the Harz they have pipes laid down the shafts carrying water, with small holes, or with rose jets, so that a small stream of water trickles down the shaft, and thus keeps the timber wet, and in such a shaft timber seems to last very well. Anything is better than to let the timber get alternately wet and dry, or alternately cold and hot. Considerable attempts have been made to preserve the timber by chemical means. In some of the salt mines they have found it advisable to steep the timber for some time in brine, and find that in an ordinary moist atmosphere it will last an amazing length of time; but the lecturer did not know that, on the whole, the advantages were so great as to counterbalance any great expense. Various other methods have been suggested, and one or two have given good results. One of these is a method which has been practised in Wicklow since the last century—that of steeping the timber in pools of water pumped from the mine, which water contains sulphate of iron and some sulphate of copper, and there is no doubt that the presence of the latter substance is very important. Sulphate of zinc and chloride of mercury have also been proposed, but most of these methods, unfortunately, are too expensive to be used for mine timber, which must be looked upon, after all, as only temporary, for it is all the time being split. In some cases the lecturer had known timber to be renewed three times in four months.

If you find some of the frames giving way, from one cause or other, it will be necessary to take off a certain length, which can usually be done with the assistance of a few struts, and then adopt some other means of securing, such as tubbing, brickwork, &c. When there is a considerable quantity of timber in the shaft it necessitates the employment of a very valuable and ingenious class of men—timbermen, or shaftmen.

THE NEW FETTLING MATERIAL AT RISE CARR.—A meeting of the men employed at the Rise Carr Ironworks of Fry, Ianson, and Co. was held for the purpose of expressing their opinion, and giving the results of their experience, concerning a new fettling material introduced at these works by Mr. Barnett, of London. Mr. John Griffiths was called to the chair.—Mr. Barnett stated that the new fettling, which was intended to supersede the use of scrap iron for the purposes of puddling, was a chemical composition mixed with sawdust. The result of its employment in two experimental furnaces at Rise Carr had been so satisfactory to the firm that they had consented to its adoption in all the furnaces for a whole week, and so far as he could ascertain the men had all liked it. It saved the time occupied in the fettling of a furnace by at least a quarter of an hour, it brought about an economy in the cost of fettling, and it reduced the cost of producing puddled bar, which afforded the employers a chance of quoting lower rates, and thus bringing more trade to the district. A good many people believed that it was impossible to do without the use of scrap for the fettling of puddling furnaces; but he thought that if they could do without it for a whole week they could do without it altogether, and the experience of the past week had shown that they really could dispense with it. The saving effected by the use of his fettling he estimated at 25 to 30 per cent., but he had another process by which not only scrap iron but blue billy and tap cinders could be got rid of, thus leading to a still greater economy. He proposed to offer every man employed at the Rise Carr Works a premium of 2s. 6d. if he worked without scrap iron for a fortnight, and he would, in addition, offer prizes of 30s., 20s., and 10s., for the best bottom at the end of the fortnight. He invited every man to state his own opinions freely, whether for or against his fettling, which was simply a metallic substance to which he had given the name of "electricine."—An ironworker stated that in his opinion it was not possible to do without scrap altogether, but they might get along with much less of it than they had hitherto been accustomed to use.—Mr. Bennett, puddler, stated that the fettling had given himself and his mate every satisfaction. It made the iron work much more lightly and easily. Much, however, depended upon the quality of iron they were set to work. During the second week they used the new fettling the "physic" was hardly strong enough, because they had to deal with much stronger iron.—Another puddler said that they required a good bottom to start with.—Mr. Barnett said he would see that this was supplied. The chemical fettling mixing with the sawdust, which acted as a carbonising agent, kept the iron well on the boil, and drove off the impurities more completely than they otherwise would be, thus improving the quality of the iron produced. In order to prevent the sawdust with which the real fettling was mixed from flying up the chimney on account of being kept too dry, he proposed to supply the fettling in small bags, which they would just require to throw into the furnace.—Charles Elgie, John Griffiths, and several other ironworkers, expressed themselves as exceedingly well satisfied with the new fettling material, and particularly called attention to the fact that it lessened their labour, and enabled them to get their heats out in less time.—A resolution was ultimately passed pledging the men to co-operate with Mr. Barnett in carrying out his ideas, and bringing the new fettling material into use.

NORTH OF ENGLAND INSTITUTE OF MINING ENGINEERS.

The general meeting of members was held in the theatre of the Institution of Civil Engineers (by permission of the council thereof) on Tuesday and the following days.

Mr. LINDSAY WOOD (president) in the chair.

The PRESIDENT, in opening the proceedings, said that before commencing business he ought to mention that their best thanks were due to the Institution of Civil Engineers, for it would really almost have stopped their present meeting had they failed to obtain the great courtesy they had received from that society, Col. Manby, and Mr. Forrest. He then proceeded to read his address, in which he remarked that he trusted that with the assistance of the council the utility and prosperity of the Institution would continue to increase during his term of office as it had done since its formation in 1852; and it cannot but be a source of gratification to the members, and especially to the 21 gentlemen who are still members, who took part at the meeting which was held at Newcastle for the purpose of forming this society on July 3, 1852, to look back on the progress it has made both with regard to the number of its members, which now amount to 975, and also to what is more important, the character and value of the papers and discussions which have been published under its auspices. Having given a brief statement of the growth of the Institute since its formation, Mr. Lindsay Wood proceeded to give an account of the advancement of mining engineering, the principal object for which the Association was formed. He (Mr. Wood) said one of the first, and probably the most important, subjects which first occupied the attention of the members of this Institute was that of ventilation. There is no subject which a mining engineer has to deal with which gives more anxiety and requires more thought than the ventilation of a mine, both as to the proper distribution of different splits of air, and the proper or theoretically correct position to place the regulators by which the different currents are governed; and this is especially so in large and extensive mines, where the different currents must to some extent be connected with each other either in the intakes or returns. The mere obtaining of a large quantity of air into a mine is a very small part of the ventilation of it. It is the proper distribution of the air into the various working parts of the mine, and having that distribution arranged in such a manner that the proportionate quantity of air passing in each district cannot be altered, or, if altered at all, then in the smallest possible degree, by an unforeseen accident occurring in any of the different districts, or by an alteration of the total quantity of air circulating in the mine. For many years the furnace was almost the only means by which mines were ventilated, but latterly mechanical means have been used to a very large extent, and with great benefit, especially in mines where the depth from the surface to the coal is not very great, and consequently requiring the upcast shaft, when they were ventilated by a furnace, to be kept at a very high temperature, which could only be done by consuming a large quantity of coals, and even then the required amount of ventilation could not always be obtained, therefore mechanical ventilation is in these cases a great saving both in the quantity of fuel consumed and the damage done to the shaft by the great heat. The saving is not so great in deep pits, where the ventilating column is a long one, and thus rendering unnecessary such high shaft temperatures and such large consumption of coals. In some cases in our deep mines, where furnaces are used, the consumption of coals for ventilating purposes is very little, if any, greater per effective horse-power than that required for mechanical ventilation, and in some cases as low as from 7 to 8 lbs. of coal per horse-power per hour, and giving as much as 240,000 cubic feet of air per minute with a water-gauge of 4½ or 5 in.; and where such results as this can be obtained it is quite as efficient and much cheaper, and less liable to derangement by accident, than any mechanical means. Mechanical ventilation is not by any means a modern invention, although it has not until within the last few years been of practical utility. So long ago as the year 1824 a letter was published in the January number of the "Newcastle Magazine" of that year, in which it was proposed to place a fan over the top of the upcast shaft, and although this was intended to be placed horizontally, yet in principle it was very much the same as that now generally adopted as the best mechanical means.

Of mechanical ventilators, Mons. Guibal's fan seems to be that in most general use, and giving very satisfactory results—in some cases as much as from 240,000 to 250,000 cubic feet of air per minute. Although the ventilation of collieries has been very much improved of late years, this has been almost entirely produced through the instrumentality of this Institution, for previous to its formation there were very few standard works on ventilation or mining science, and the true principles of ventilation were very imperfectly understood and still less practically adopted. Although the total number of deaths which occur in and about mines in Great Britain and Ireland still average upwards of 1000 per annum, yet it is gratifying to find that the death rate (from accidents) per persons employed has very greatly decreased. About the time when this association was founded it was as high as one death for every 226 persons employed, but this has been reduced, according to the statistics published for 1874, to one in every 510 persons employed, or equivalent to a saving of upwards of 1300 lives per annum. It is only by very careful analyses of the causes from which fatal accidents occur that means can be adopted for their prevention.

The causes and prevention of accidents by explosions of fire-damp have occupied a great deal of the attention of the members of this Institution, and their labours have not been without success; for, although there have been within the last few years some very serious accidents from this cause, yet, with the exception of three out of the twelve mining districts, this class of accident has been very materially reduced, there being an average during the last three years of about one death in every 9000 persons employed underground. The annual average, however, for the whole of the mining districts is much in excess of this, being about one in 3500 persons employed; there is, therefore, still a great deal to be done in investigating and preventing loss of life by explosions. There is, however, another class of accidents which is much more destructive to human life than explosions—that arising from falls of stone, and it behoves not only every mining engineer, but every workman, to devise means and use every precaution for their prevention, for they cause about 42 per cent. of the total number of deaths which occur, and between three and four times the number which are caused by explosions. They are a class of accident which are very greatly under the control of the workmen themselves, and are of all other class of accidents the least under the control of the manager of a mine; yet, with a proper system of timbering and examination of the state of the coal during its excavation, much may yet be done for their prevention. It is, however, to the workmen themselves that we must look for assistance, by their exercising the greatest care for the security of their working places while at work. There is another class of accidents which requires attention—those which occur in shafts, and which form about 14½ per cent. of the total that do occur, and there is one peculiar fact connected with them which deserves special attention, it is that the largest number of accidents occur from a

cause which appears to be one that could more easily than almost any other be to a considerable extent provided against, and that is by persons falling down the shafts either from the top or from part way down; while, on the other hand, those arising from causes which entail a great risk and require great care to prevent, such as over-winding and breaking of ropes, are exceedingly small. From over-winding there were only seven deaths in 1874, and five in 1873, which, considering that there are upwards of 400,000 men ascending and descending every day, or upwards of £100,000,000 making the double journey per annum, does not appear a large number, especially when we consider the increased size of, and very high velocity at which winding-engines are now run, some of which have attained the speed of a mile a minute when the cage is running at the greatest velocity, and having an average speed throughout the whole depth of the shaft, including the time required for starting and stopping, of half-a-mile per minute, or 800 yards in 56 seconds; and this may be taken as an example of the advance which has been made in this department of mining engineering during late years, for I feel sure that had any such velocity been proposed 15 or 20 years ago it would have been thought both impossible and highly dangerous. Before leaving the subject of preservation of life and safety in working mines, he drew attention to the subject of safety-lamps, remarking that he knew of no subject to which this Institute could better appropriate some of the funds which it now awards for meritorious papers communicated to it, than by devoting a sum of money, to be given in books or otherwise, for the best essay on the improvement and safety of safety-lamps. Mechanical engineering connected with mining has also considerably advanced in proficiency of late years, and this has no doubt been greatly stimulated by the reduction of the hours of manual labour which have taken place during the last four or five years, and which have in some of the largest producing districts amounted to two hours per day, or 1-6th of the total time worked, thus rendered necessary the employment of large and powerful machinery in order to keep up the annual production of coal. As I before remarked, the engines now employed to draw the coals up the shafts have been very greatly improved, and some of the largest and best constructed are performing a very large amount of work; in some instances they are developing as much as from 900 to 1000 indicated horse-power, and lifting between 120 and 130 tons of coals in excess of the weight of tubs, cage, and rope per hour, from depths of upwards of 1200 ft. The use of compressed air as a mode of transmitting power is becoming much more general in coal mining than formerly, and one of the most recent applications is that of driving underground hauling engines. If this description of power can be produced and transmitted economically to the main road station and there utilised for working small engines for hauling, by endless chain or otherwise, the tubs from the working face to the main roads, it will be the means of very greatly economising the labour of small boys, which is a very desirable object to attain. In his own experience he has always found a considerable loss between the indicated horse-power required to compress the air and that of the indicated horse-power obtained when utilised at distances of 1000 to 1500 yards from the compressing engine. Yet this loss of power although great is not much, if any, in excess of that expended by transmitting power by means of wire ropes, and is much more economical in wear and tear.

There was another use to which he hopes some day to see it applied—that of driving ventilating fans underground placed at long distances from the bottom of the shaft. The power necessary for driving the air into the furthermost off split being that which governs that required for all the other splits, it will be easily seen that if the resistance, or the power necessary for driving the air round the far off splits, could be reduced, it would reduce that required for all the other splits, and with the same and original shaft ventilating power a very much larger quantity of air would be obtained in all of the different districts. I, therefore, venture to think that if comparatively small ventilating fans, worked by compressed air, were placed in the returns of the furthermost off splits capable of giving the required quantity of air, with even 1 in. of water pressure, it would give so great an assistance to the general ventilating power by relieving the assistance of the air in travelling round these far-off splits, and consequently relieving the artificial resistances (if he might be allowed so to call it) of all the other districts or splits, and producing such a total increase of air as to amply repay the cost or loss of power by using compressed air for driving the fan. Coal-cutting by machinery has been much improved during late years, and in some mining districts has become much more general in use. The whole of these machines are now, he believed, worked by compressed air, all other modes of power having been abandoned as impracticable, and it is without doubt the best means of applying power in such situations as that where coal cutting machinery must be applied, for the compressed air does good rather than evil when exhausted direct from the cylinders into the working face, which is not the case with either steam or water. He does not, however, attribute to its use so great an advantage as some writers have done as a means of improving the ventilation and reducing the temperature of the working faces. There can be no doubt that it assists the ventilation in both these ways, but it is to such a small extent that it is hardly appreciable. So far as regards the practical results obtained from cutting coal by machinery, there has not yet been that amount of saving of manual labour which was expected, and which will be accomplished. This, however, varies very much in different districts and in different seams. But he does find a considerable saving in production of large coals, as much as 13 to 15 per cent. increase, which in house and steam coal collieries is a great consideration.

He could not close his address without saying a few words on the increased facility which is now afforded to those gentlemen who in the North of England are studying for the mining and engineering professions, as well as for other branches of commercial industry—by the establishment of a College of Physical Science at Newcastle-on-Tyne. Their former President, the late Mr. Nicholas Wood, at the first meeting of this society, in 1852, called the attention of the members to the necessity and advantage which would be derived by such a scheme being carried out; and although several gentlemen, and amongst others the late Duke of Northumberland used great exertions to obtain its formation, they were not successful, and it was not until October, 1871, that, by the assistance of the University of Durham and the untiring zeal of its warden, Dean Lake, sufficient funds were obtained for its endowment, and this most important object was attained. Although it has been little more than four years in existence it has proved very successful. It is impossible, he thinks, to attach too high a value to the establishment of this college, and the results which he ventures to assert will be derived from it, for without such an education as it affords our mining engineers cannot develope our great mineral resources with that degree of economy which is necessary to enable other branches of manufacture in which the consumption of coal forms so large an item to be produced at a cost which will enable England to compete with continental production. He trusted that when the knowledge which this college will impart has had time to develope itself it will very greatly contribute towards the accomplishment of the object, for which this institution was—namely for the advancement of mining knowledge, and thus alleviate the loss of lifes which occurs in the mines.

Mr. E. F. BOYD, in proposing a vote of thanks to the President for the very nice paper he had introduced to their notice, might congratulate him upon the success of the Institute, of which his late father was the chief instigator.

The vote was carried by acclamation, and having been briefly acknowledged by the President the following paper was then read:—

ON THE APPLICATION OF COUNTERBALANCING AND EXPANSION TO WINDING-ENGINES.

BY MR. JOHN DAGLISH, OF TYNEMOUTH.

In a memoir previously published in the Transactions of the Institution the writer gave a *resume* of the various methods of counterbalancing winding-engines in operation up to that time. Since then the scroll drum, to which reference was made, has been successfully introduced at a number of collieries. This arrangement consists of a spiral groove on the exterior of a cone drum, the groove being sometimes cut in the wood, sometimes formed of channel iron. It was first successfully used in wood at the Boldon, and next at Eppleton, in iron, which gives the greater satisfaction of the two. It is 16 ft. minimum and 25 ft. maximum diameter, with five turns on the flat at the larger diameter. At both collieries the counterbalancing works very well, and the work of the Boldon engine during winding is very uniform. The only drawback is that in deep pits the space passed through by the cage at the bottom of the pit, and by the cage at the top of the pit when changing tubs varies greatly. Thus, with a cage having four platforms, in a pit 600 yards deep, each platform 4 ft. 6 in. apart, in order to equalise the load on the engine the smallest drain of the spiral drum should be about 15 ft., maximum 30 ft., so that whilst the engine lifts the cage at the bottom of the pit 13 ft. 6 in. in order to change the tubs, it will at the same time lift the cage at the surface 27 ft. It is not possible, therefore, with cages having several platforms to change the tubs at top and bottom of the pit simultaneously, so that detention is caused. The objection can, no doubt, be surmounted in several ways, perhaps the most perfect arrangement being by hydralic elevators, introduced by Mr. Fowler, and already described in the Transactions. Three other methods of counterbalancing have been suggested, but are not yet in practical operation in England. One is for storing up force by compressing air into a receiver during the early part of the winding, from which it is given out towards the termination, which has the serious objection of loss of power during compression; another system, that of Guinotte, in use in Belgium for some time, and recently introduced in England—that of accommodating the quantity of steam to the absolute work to be done. The third system, that of pumping water into an accumulator, has for some time past engaged the attention of the writer. The author then described, by the aid of diagrams, the successful application which he had made of the principles of counterbalancing and expansion at the Marquis of Londonderry's Silkworth Colliery, near Sunderland. The valves of the engine are of the usual equilibrium or double-beat description. In ordinary engines worked by eccentrics the steam-valve is opened by a tippet of varying travel, and describing the arc of a circle supporting the lever of the valve, and thus keeping it open during the whole stroke. In the Silksworth engine the lever of the steam-valve can be slightly shortened or lengthened in effect by a simple appliance attached to the end of the lever (this being the whole of the apparatus necessary for working expansively), which moving on a joint in one direction allows the tippet to pass it in returning. The writer has recently visited St. Etienne to examine Mr. Audemar's cut-off gear, and states that the apparatus seems to work well. Mr. Audemar states that 37 per cent. of coal is saved by cutting-off at half stroke. The invention of Mr. Guinotte, of Mariemont, near Mons, of gradually shortening the cut-off, was also favourably referred to, and Mr. Daglish also drew attention to an ingenious modification of Richards's indicator, which gives the diagram as a continuous line. By a special arrangement of ratchet wheels the ordinary barrels of the indicators revolves continuously in one direction. The paper on which the diagram is taken is kept tight by a brake on the second drum.

The PRESIDENT was sure they were all obliged to Mr. Daglish for the paper he had read. In winding-engines there was, undoubtedly, great loss of power, especially in large engines, as they had to use steam not only to raise the load, but at the end of the journey to stop the engine also. Both Boldon and Eppleton were under his control; he could, therefore, confirm what had been stated concerning them. He did not agree with the statement as to the time required to change the cages. They use two-deck cages, which are stopped in such a position that the upper deck of the cage at the top and the lower deck of that at the bottom are changed simultaneously; and in changing the other decks the different travel of the rope, which is due to the two diameters of the drum, is obviated by running the top cage past the keps until the bottom deck of the cage at the bottom of the pit is put on the keps, and then the top cage brought back on to the keps at the surface. They were raising 1000 tons of coal and changing 500 men in the 10 hours. He thought that Fowler's, or some such apparatus, was a very great improvement. He would further like to ask Mr. Daglish how the brakesman had power to give the variable expansion as required?

Mr. DAGLISH said that at Boldon they had succeeded in changing the tubs by the mode described by the President, but he thought that was because they used two-decked cages only; it was probable that they could not continue it for more than two decks. As to the expansion gear, the brakesman knew nothing about it; simply pushing his lever over first partly, and then completely, as usual; he had nothing to do with it unless he required full steam, when he had the means of getting it.

Mr. ADAMSON thought they should give some attention to temperature, and suggested that it would be better to use compound high-pressure engines, when they would get good expansion and reduced temperature. He thought it well to consider when the engine is in full speed, and working at high expansion, how far does the cylinder become a self-condenser. He was in favour of reducing the temperature by degrees. If regularity and uniformity of force were required it was desirable to produce parallel force during the entire journey. He was convinced that high expansion and great change of temperature cannot be accomplished without much loss. In the compression of air there ought not, he thought, with proper arrangements to be so much loss of power as had been mentioned.

Mr. T. WOOD BUNNING (the secretary) explained that the mode touched on by Mr. Daglish was merely to get over the difficulty of varying work and how to meet that difficulty with the least loss. The question was not how to do it in the most scientific way, but how to combine theory and practice so as to get the best attainable result, and they had to keep in mind that the engineer must always have full control of the engine while they are changing the tubs.

Mr. HEDLEY enquired whether Mr. Daglish had given attention to depth, and whether he could state the minimum depth of shaft to which it is advantageous to apply expansion gear?

Mr. DAGLISH observed that it was difficult to say, but it was only where a large expenditure had been incurred. He might refer to a case where the engine-house had cost 7000*l.* without the engine. It was not required except for deep pits, but abroad, where they had deep pits, it was found very advantageous.

Mr. PIERCE thought they must admit the advantage of counterbalancing, but the question was whether in introducing so large and heavy a drum they did not more than compensate for this. He would like to know whether diagrams had been taken for the chain balance and the scroll drum balance. As to the diagrams shown, there appeared to be some wire drawing of the steam.

Mr. LAWRENCE remarked that in colliery engines it was essential to have full power to start the load. There was no doubt that in compound engines you can utilise in the next stroke the temperature given off; but when you have extra pistons you must have extra friction, so that it became a question whether, under all circumstances, greater economy would result. As to the weight of the conical drums, they were attempting to keep them as light as possible by making them of T-angle iron and steel plates; but taking those of 19 ft. up to 30 ft., he thought 50 tons about as light as they could go to.

Mr. J. B. SIMPSON enquired whether Mr. Daglish could state how much coal he used in his boilers to lift a given weight of coal up the shaft by this arrangement, as compared with that used by the ordinary style of engine under his charge for the same depth?

Mr. W. COCHRANE said that at Blackwell they had in operation Guinotte's system of expansion; but, unfortunately, he was not able to give the results, as the expansion gear had only been at work 10 days. The diagram showed an enormous economy of steam; but perhaps the best proof was that they had done the same work with two Cornish boilers instead of three. They had drawn 876 tons gross in eight hours five minutes, and he found that they consumed 8·7 lbs. of coal to draw 1 ton of coals now, and 17·47 lbs. under the old system. In Guinotte's system a block works on a cam lever attached to the expansion valve, the curve corresponding with the balance of moments on the drum. You had only to arrange the cam lever once for all and it was then out of the power of the engineer, who, however, had full power over the steam at the beginning and end of the journey.

Mr. SIMPSON said that as to the use of high-pressure steam in winding-engines he might refer to a case where with a temporary engine of the multitubular boiler type, with two 9½ in. cylinders, and working at 100 lbs. per inch, they drew 300 tons a-day from 50 fms., with the consumption of 12 cwts. of coal, so that 1 ton of coal raised 430 tons up the shaft, and one cylinder being disabled they continued with one cylinder only, and curiously enough used 2 cwts. of coal less in doing the same amount of work. He suggested for consideration the use of high-pressure steam for great depths, which, no doubt, would lead to economy.

Mr. DAGLISH said that at Silksworth they could not reduce the work done into fuel used, as the boilers were employed for various purposes. Formerly the six boilers could just drive the engine eight strokes per minute, but with the expansion gear they drove it 14 strokes easily. As to Mr. Adamson's observations, he must observe that in colliery engines they did not know of steam at 100 lbs. pressure; they had not yet reached half of that. Mr. Adamson had no doubt obtained marvellous results, and he understood he had reduced the consumption of fuel to 2 lbs. per indicated horse-power, and he believed that their colliery consumption would be nearer 20 lbs., so that there was a wide margin for improvement even without introducing high-pressure steam. As to the great strain, when they did not commence at high pressure there was practically no strain to provide for. With two engines working together and cutting off at half stroke the strains were nearly uniform. He did not describe Guinotte's arrangement, as he anticipated a paper on a future occasion from Mr. Cochrane. He might mention, however, that Mr. Audemar speaks of the limit of expansion, while Mr. Guinotte considers there is no limit to expansion. In Mr. Cochrane's case the pit was not so deep as Silksworth, so that they could carry the cut-off to the very extreme. He was of opinion that when they had deep workings they must have steel ropes, large drums, and variable expansion.

Mr. PIERCE pointed out that the nearer the pressure at which they worked was to atmospheric pressure the greater was the loss, because they had not the advantage of the difference. He believed the adoption of working with expansion had been much stopped through one cylinder only being employed.

Mr. T. HAWTHORN believed that the present system of winding will soon be replaced by higher pressure engines. Only three weeks ago he travelled on a locomotive from London for a distance of 80 miles without stopping, and found from calculating the work done and the fuel actually used that the consumption was but 1¼ lb. of coal per horse-power indicated, the power actually developed being 1100-horse power in a machine weighing only 33 tons; this was not an experiment at all. If they could only apply higher pressure to winding, both the handling of these engines would be much improved, and the first cost in large heavy machines, houses, and boilers would be greatly diminished.

Mr. PAGE enquired whether Mr. Daglish had seen the Corliss engine which was working at Manchester, with only 1¼ lb. of coal per horse-power indicated, the steam entering at 160 lbs. to the square inch, and being cut off at one-fifth stroke. The loss of pressure between boiler and engine was 1 lb. only. The boiler evaporates 10 lbs. of water per pound of coal consumed. The expansion gear in the Corliss engine is entirely automatic.

Mr. ROSS remarked that from the description of the valve-gear given by Mr. Daglish it appeared to represent the Corliss valve gear, though differing somewhat in detail. They must remember that in winding-engines they could not get speed to act on the valve gear.

Mr. COCHRANE proposed a vote of thanks to Mr. Daglish for his paper, and it was unanimously agreed to.

Mr. DAGLISH, in acknowledging the vote, said that the valve-gear he had described was no invention of his own. Mr. Barclay was the chief designer, but Mr. T. W. Bunning was also entitled to much credit in perfecting it.——The next paper read was on—

LUBRICATING COAL TUBS AND CORVES.

BY E. BAINBRIDGE.

Amongst the numerous expenses incurred in producing coal the most important charge next to wages is usually that of materials, and the item oils and grease used for lubricants of machinery, wagons, tubs, &c., occupies a prominent place; lubricants, moreover, are of no further use after once applied. Improvements in the oiling of ordinary railway trucks have resulted in a good degree of economy, but the hard usage to which colliery wagons are subjected have made it difficult to apply the same modes of lubricating, hence at many collieries the lubrication is done in a rough and wasteful manner, involving unnecessary expense and increased friction. The expenses upon oil and grease for lubricating tubs amounts in a large pit to a considerable sum, and many ingenious devices for lubricating have recently been brought out for economising. He mentioned 14 different methods of applying lubricants. The ordinary method of greasing by hand is well known, and always wasteful. In the second mode of lubricating by external appliances a revolving brush is used. In the mode introduced some years ago by Mr. Daglish, at Seaham, the tub passes over the brushes, which revolve one-third of a revolution by the axle striking a cam fixed on a strap; the brush saturated with thick oil meets the axle passing over; the strap is sometimes replaced by friction wheels. This system reduced the cost of lubricating from 0·517d. to 0·312d. per ton. Some years ago the writer found that sufficient lubrication was obtained with revolving brushes without gear, grease being used thick enough to keep the brush saturated, but sufficiently liquid to allow it to be moved round by the axle of the tub; this plan answered very well at Wingate Grange Colliery. The wear of brushes is the chief evil of these systems. At Shiresoaks Colliery the lubrication is performed with star-shaped metal wheels running in small tanks, containing thick grease; the axles to be lubricated take into the indentations in the star, as the tub passes over. As compared with hand lubricating 48 per cent. of grease is saved. Messrs. Knowles, of Pendleton, used a spatula or flat brush, which applies the grease to the axle when the tub passes over the machine, the application being made by the foot of the man pushing the corf striking the lever. In the plan devised by Messrs. Lampden and Theedam, of Wakefield, the corf coming in contract with the head of the upright bar presses it down, and causes the brush through the connections to rise out of the cistern, where it has been immersed in oil, and to touch the corf axle, first at the proper time, and then to go slowly back to its former position, as the corf leaves the upright bar to the brush will grease the full width of the bearing. In Halliday's system, used at a large number of collieries, a small pump is placed in a trough of oil, and the tub is pushed over the oil tank against a fixed stop; tubes are provided, so that when the tub is in position the man presses his foot on the bearing, and a jet of oil is applied to all the bearings simultaneously; this machine could easily be made self acting. In these systems no special arrangement of pedestal is required to allow the lubrication to take place, and in one or two machines air enough for a large number of corves.

Taking the next class of arrangements, he referred to the system well known at various collieries of having an ordinary grease-box in the pedestal with a lid, through which the grease is applied. He next described an arrangement of his own, in which the principle of the needle lubricator is adopted. The oil is inserted at the bottom of the tub from the inside by removing a cap. A large number are used at Nunnery Colliery, Sheffield, and one application of oil appears to last about eight weeks. In Mr. Watson's system the passage of the oil from the chambers to the axle to the tub is regulated by a movable ball, maintained in position by a small plug. At Messrs. Boickow and Vaughan's collieries this arrangement appears to answer well. Mr. Lupton lubricates axles by means of a hollow wheel, the oil being applied to the axle also by means of a needle lubricator. In the system designed by Mr. Hadfield, of Sheffield, the pedestal consists of a chamber filled with oil, the level of the oil being so arranged that it is only when the tub is turned over or on one end that it passes through the sponge which fills up the vent hole. The oil in the apparatus lasts a long time. He then came to the third principle of lubricating—that of allowing the grease to be used over and over again. In one the pedestal consists of a box-chamber so arranged that when the tub is turned upside down the oil passes round the chamber without spilling, and the loop of a small band hanging on the axle dips into the oil. When the tub is in motion the band raises enough oil to lubricate the axle. In the other the band is dispensed with, a kind of hopper being used on the upper side of the axle, so that when the tub is tilted the oil flows through holes into the upper end of the chamber; on the tub returning to its horizontal position, part of the oil falls into the hopper and lubricates the axle on the next journey. It is most difficult to make a proper comparison between the cost of lubricating by different systems, as the conditions affecting the cost are so various.

The CHAIRMAN suggested that the discussion on Mr. Bainbridge's paper should be adjourned until the next meeting, and proposed the usual vote of thanks.

Sir GEORGE ELLIOT said that as Mr. Bainbridge was going to make some further experiments he hoped he would include such as would test the relative value of the different lubricants employed, as it was desirable the quality of the material used in each case should be known. He was glad to see that the Institution did not let the most minute subjects connected with the economic working of collieries escape their attention; and, with regard to lubricants, he thought it a great question whether cheap grease was economic. He saw when in Egypt Sidebottom's instrument for lubricating the rolling-stock on the railway, and the economy was quite marvellous. He recommended him to patent it in this country. The lubricating box contained the material, which was acted upon by a spring, so that it was pressed on the bearing, and the economy was equal to about 20 per cent. He remarked that as the members were about to visit works in the neighbourhood he would be glad to secure them admission to the old works of Glasse, Elliot, and Co., at Greenwich.

The PRESIDENT thanked Sir George for the introduction on behalf of the members generally, and the meeting then adjourned until Thursday.

The report of Thursday's proceedings is deferred until next week. A member writes that the paper by Mr. G. A. LEBOUR, on the Larger Divisions of the Carboniferous System in Northumberland, was a very interesting one, and elicited a good discussion, in which Mr. Boyd, a practical mining engineer and geologist in the North, took part, Prof. Warington Smyth, in the course of the discussion, made some valuable observations, and alluded to information he had received the previous evening respecting important borings lately made in the North of Belgium. These borings, he remarked, have conclusively established the fact that the coal field in North Belgium extends much further north than was thought possible only a short time ago, and the geological conditions under which this coal is found in Belgium appear at present to have an important bearing on the condition of the coal field in North and West Northumberland.

Mr. W. COCKBURN read an elaborate paper on Cook's Ventilating Fan. He also

passed under review the progress that coal mine ventilation has made since the formation of the Northern Mining Institute, 24 years ago. It is well known that the Guibal Fan at present holds the supremacy as a mechanical ventilator, having driven all competitors out of the field. Mr. Cockburn claims that Mr. Cook's fan is superior in principle to the Guibal fan, and that better results are obtained from it both with respect to economy and efficiency. A good discussion on the subject ensued, and Mr. Cochrane replied very ably to the points raised by Mr. Cockburn. The discussion was, of course, adjourned, and it will be resumed again shortly, when the results of elaborate experiments with both fans will be given. The subject is a most important one, and it is certain to attract very great attention in the mining world.

The paper of Messrs. HALL (H. M. Inspector) and CLARK, on the Mechanical Effect of Blown Out Shots on Ventilation, was taken as read, as there was no time to have it read. This is to be regretted, as this also is a most important subject connected with mining.

THE COLLIERY ACCIDENTS FUND, AND THE WIGAN EXPLOSIONS COMMITTEE.

A deputation from the Wigan Explosions Committee waited on the Lord Mayor on Wednesday to ask for a grant in aid from the Colliery Accidents Fund raised under the auspices of the Lord Mayor a few years ago, the balance of which now lies at one of the City banks. The deputation consisted of Mr. Maskell Peace, town clerk of Wigan; the Hon. and Rev. Canon Bridgman, rector of Wigan; Mr. T. Knowles, M.P.; Messrs. A. Hewlett, Mr. Ackersby, W. Crompton, J. Thompson, W. Pickard, and G. L. Campbell. The interview took place in the drawing-room of the Mansion House, and there were present with the Lord Mayor Mr. S. Morley, M.P.; Mr. R. N. Fowler, M.P.; Sir F. Lycett, and Sir T. Gabriel.

Mr. MASKELL PEACE, after introducing the deputation, said that in the year 1868 a committee was formed in Wigan for the purpose of affording relief in any case of distress arising out of an explosion. They had found that a great number of small accidents occurred for which help was difficult to be obtained. A fund was raised for the purpose of giving relief by His Lordship's predecessor in office, which was made a national undertaking. Upon a previous occasion they had made applications to the chairman of the fund, Sir Thomas Gabriel, for relief, and he kindly suggested that they should first make a strong local effort to raise funds. This was done, and they succeeded in raising 17,572*l*. That money had now been spent, and there remained to be relieved 55 widows and 129 children who had been made destitute by "little accidents," but not of national proportions. His lordship had the power to dispose of the surplus in his hands, and they respectfully applied for a contribution from the fund in aid of those he had mentioned. They wanted 8000*l*., and then they would be able to hand over all the cases to the organisation formed for the relief of such cases. The permanent fund was contributed to by the colliers themselves or the colliery owners, and it was likely to meet all their future requirements. Contributions had flowed in very liberally to the fund, and the people of the district thought there was no necessity to raise more money at present, particularly as a surplus fund existed in London. They had never had a contribution from the London fund.

The LORD MAYOR thanked the deputation for coming to him in such numbers, and asked them to retire while the committee considered the application. Upon the deputation re-entering the room, the Lord Mayor said he was glad to say that the committee had favourably entertained the application made to them. The committee felt that they were under some obligations to consider the Barnsley Colliery Committee, so they had determined to apportion 1000*l*. out of the fund to that committee, and hand the surplus to the committee represented by the deputation.

Mr. MASKELL PEACE said it was difficult for him to say how very grateful the members of the deputation were, but he thanked the Lord Mayor and the committee most sincerely.

The LORD MAYOR said he wished it to be known throughout Yorkshire that the fund formed in the City was now closed, and nothing remained in his hands.

THE CARRIAGE OF EXPLOSIVES.—Major Majendie, R.A., her Majesty's Inspector of Explosives, in his annual report describes the action taken to bring into operation, on Jan. 1, the Explosives Act of last session. The necessary arrangements were, as far as his department was concerned, completed by Dec. 9. The Board of Trade had, early in the autumn, issued notices to the railways, canal, and harbour authorities, calling on them to frame bye-laws under sections 34 and 35 of the Act. In the case of explosives other than gunpowder, with few exceptions, double packages had been required, and in the case of nitro-glycerine preparation these packages required to be waterproof. It was represented to him that to insist upon the invariable use of double packages for gunpowder would involve a serious dislocation of the trade; and accordingly the expedient of single packages to be approved by the Government Inspector was suggested as a solution of the difficulty, with a reservation of the right of the trade to use double packages if they preferred. Accordingly, in section 33 it is directed that if gunpowder exceeding 5 lbs. is packed for conveyance in a "single package" (as distinguished from a "double package" as defined by the same section), such single package shall be a box, barrel, or case of such strength, construction, and character as may be for the time being approved by the Government Inspector as being of such strength, construction, and character that it will not be broken or accidently opened, or become defective or insecure whilst being conveyed, and will not allow the gunpowder to escape." Major Majendie, in order to remove the question of the approval of the different packages from the region of what might be called caprice or fancy, devised a set of tests which would show the capability of the package to undergo (1) exposure to alterations of temperature and atmospheric changes, (2) falls and blows, (3) shaking and jolting: and ultimately assigned a standard test far below that which the Government barrels used in his experiments proved themselves capable of satisfying. The standard of strength has, he says, been sharply criticised, and pronounced excessive; but he is decidedly of opinion that any lower standard would have failed to afford that increased measure of safety in the transport of powder which it was one of the principal objects of the Explosives Act to afford.

TECHNICAL EDUCATION AND THE CITY GUILDS.—On Thursday the Worshipful Company of Turners presented the freedom and livery of the guild to Sir Joseph Whitworth, Bart., "in recognition of his distinguished ability as an engineer, his great improvements in the design, manufacture, and application of machine tools, his special inventions for producing and measuring exact mechanical results, and his munificent endowment for the improved education of working engineers." The honour is doubtless well deserved, although it is much to be regretted that some of Sir Joseph projects have delayed rather than assisted the introduction of the metric system, which will hereafter prove a greater boon to working men than either his inventions or his munificence. Mr. C. Hutton Gregory delivered an appropriate laudatory address, and the usual formalities of admission were then gone through. Sir Joseph, in acknowledging the honour, explained, in his usual style, what he had done for science and mechanical engineering. Amongst other things, he stated that a workmen used to receive 12*s.* for the same amount of work as is now done for one penny. His narrative was attentively listened to throughout, and was a very interesting one.

HALIFAX.—June 1: The following quotations are from Mr. J. H. Thackrah's list:—Halifax and Huddersfield Union Bank, 29¾; Halifax Joint-Stock Bank, 29¼; Halifax Commercial Bank, 24¾; London and Yorkshire Bank, 28*s.* 9*d.*; John Crossley's, 12½; Whitworth and Co., 8; Elland Gas, 20; Rastrick Gas, 18½; Bradford Brick and Tile, A, 21; ditto, B, 7; Charlestown Brick and Tile, 10; Ripponden Commercial, 11; Hebden Bridge Cotton, 10; Yorkshire Boiler Insurance Company, 22*s.* 6*d.*; Norton Brothers, 8.

CHEMICALS, MINERALS, AND METALS.—(Messrs. J. Berger Spence and Co., May 31)—Alumina: Alum, 7*l.* for loose lump; ground, 8*l.*—Aluminous cake, 4*l.* 15*s.*—Ammonia: Sulphate, grey, 18*l.* 5*s.*; white, 18*l.* 10*s.*; muriate, 30*l.*; sal ammoniac, firsts, 45*s.*; seconds, 44*s.*—Acid: Tartaric, English, at 1*s.* 6*d.*; foreign, 1*s.* 5½*d.*; oxalic, 5*d.*; sulphuric, 3*l.* 10*s.* to 3*l.* 15*s.*; picric acid, 1*s.* 8*d.* per lb.—Arsenic: 12*l.* to 12*l.* 5*s.*—Bleaching Powder: 5*l.* 15*s.*; for the whole of 1876, 6*l.* 7*s.* 6*d.* to 6*l.* 10*s.*—Litharge: Best flake, 25*l.*—Metallic Salts: Iron salts, green and rusty copperas, 55*s.*; in casks or barrels, 60*s.*—Copper Salts: Sulphate of copper, 24*l.* 10*s.*—Magnesia: Epsom salts, 3*l.* 17*s.* 6*d.*; refined, 4*l.* 10*s.*—Nitrate of Soda: 11*l.* 5*d.* to 11*l.* 6*l.*—Potash: Muriates, 80 per cent., at 8*l.*, f.o.b.; Prussiate, yellow, 11½*d.*; chlorate, 9½*d.*; bichrome, 4½*d.*—Soda: Cream caustic, 60 per cent., 12*l.*; white, 60 per cent., 12*l.* 7*s.* 6*d.*; soda ash, 1¾*d.* to 1 13-16*d.*; soda crystals, 4*l.* 7*s.* 6*d.*; bi-carbonate, 11*l.*; salt cake, 2*l.* 15*s.*; Glauber salts, 2*l.* 17*s.* 6*d.*—Sugar of Lead: Brown, 25*l.* 10*s.*; white, 28*l.* 10*s.*—Brimstone: Best thirds, 6*l.* to 6*l.* 5*s.*—China-clay: 1*l.* 5*s.* f.o.b. Cornwall; "Rosemellyn," 24*s.*; "BM," 31*s.*—Iron Ore: Hematite, 15*s.* to 22*s.* 6*d.*; oolitic, 8*s.* to 10*s.*; Algerian, 50 per cent., 25*s.* to 24*s.*, c.i.f. U.K.—Manganese: Ores, 90*s.* to 100*s.* for 70 per cent.—Pyrites: Spanish cupreous, 5½*d.*; non-cupreous, 6¾*d.*—Phosphate of Alumina, 3*l.* to 3*l.* 10*s.* per ton.—Phosphates: High strength, 5*l.* to 85 per cent., 4*l.* to 4*l.* 5*s.* per unit; Estremadura, 1*l.* 3*l.*; ordinary, 60 per cent., 1*l.*; precipitated phosphate of lime, 70 per cent., 7*l.* 15*s.*—Copper: Chili bars, 78*l.*; B.S. ingot, 66*l.*; tough cake, 84*l.*—Iron: "Ayresome" Yorkshire Pig-Iron: No. 1, 61*s.* 6*d.*; No. 2, 48*s.* 6*d.*; No. 3, 45*s.* 6*d.*; No. 4 (foundry), 45*s.*; No. 4 (forge), 44*s.* 6*d.* net cash, or 1*s.* extra four months' bills; Scotch pig, warrants, 58*s.*—Lead: Best English soft pig, 21*l.* 10*s.*, delivered at Manchester.—Quicksilver: 10*l.*—Spelter: Silesian, 24*l.* 10*s.*; English, 25*l.*—Tin: Straits, 76*l.* 10*s.*; British, 82*l.*—Tin plates: Best charcoal, 28*s.*; best coke, 24*s.* per box.—Tubes and Fittings (discounts): Gas tubes, 70 per cent.; fittings, 72½ per cent.; galvanised tubes, 52½ per cent.; fittings, 57½ per cent.; steam tubes, 52½ per cent.; fittings, 57½ per cent.—Esparto: Oran, fair to best, 7*l.* to 7*l.* 15*s.*; Susa, fair to good, 8*l.* 5*s.* to 8*l.* 15*s.*; Spanish, fair to best, 10*l.* 15*s.* to 11*l.* 10*s.* per ton; Tripoli, good ordinary, 5*l.* to 6*l.* per ton.—Globe steam-boiler powder, 23*s.* per cwt. in casks.—Resin: Common strained, 4*s.* 9*d.* per cwt.; medium, 5*s.* 9*d.* to 6*s.*—Super-phosphates, 80 per cent. soluble, 3*s.* 6*d.* per unit; 25 to 26 per cent., 3*l.* 10*s.*

STEAM-ENGINES, AND DIRECT ACTING PUMPING-ENGINES.—One part of the invention of Mr. H. CHERRY, of Aston, near Birmingham, consists of the following arrangement of the cut-off valves of steam-engines. Working on the back of the main valve is a cut-off valve, which covers one or other of the ports in the main valve, and cuts off steam from the corresponding end of the cylinder. This cut off valve is moved by steam pistons, the admission of steam to the cylinders of the said steam-pistons being controlled by a small slide-valve worked by mechanism, which is controlled by the governor. The steam ports in the cut-off valve cylinders are small compared with the exhaust ports, and by means of packing rings in the cut off valve pistons the said ports are closed before the pistons reach the end of their stroke, so that only a small quantity of steam is used for working the cut-off valve, and the exhaust steam is cushioned, and the pistons worked noiselessly. The invention consists further of the following improvements in the valves of direct-acting steam pumping-engines. On the steam cylinder the steam chest containing the main slide valve is bolted in the usual way. The steam chest is bored out at each end to receive the pistons which move the main valve. The subsidiary valve which admits steam to them is placed on the connecting part of the casting. The subsidiary valves moves at right angles to the motions of the pistons, and is worked by tappets by the main pistons. The edges and exhaust cavity of the subsidiary valve are shaped in such a manner that in normal working, the steam is cut off and the exhaust opened to the pistons at such points in the stroke that the main valve shall travel its normal stroke, but if the main piston travel beyond its normal distance, then the subsidiary valve will receive a longer travel, and its edge and exhaust cavity will be so disposed that the steam will be cut off earlier and the exhaust opened earlier to the pistons which move the main slide valve, thus shortening its stroke.

MINING AND STOCK EXCHANGE NEWS OF THE WEEK.

Messrs. F. W. MANSELL and Co. (Sworn Stock and Share Brokers), Pinner's Hall, Old Broad-street, write to us as follows:—

I.X.L. (Gold and Silver)—COMSTOCK MINES (No. IX).—Last week we mentioned that a well-known expert—Mr. Israel Knox, of the Gold State Foundry, San Francisco—had visited Silver Mountain district, in which is situated the I.X.L. and Exchequer Gold and Silver Mines. It may be stated, *en passant*, that Mr. Knox is the inventor of the Knox Amalgamating Pan, and has long been engaged in mining operations on the Pacific Coast. Inasmuch as Mr. Knox has no interest whatever in Alpine County, being merely but a looker-on, his opinion is worth the consideration of investors. Mr. Knox has hit the nail so squarely on the head in regard to mining operations in Alpine County, that we venture to publish it, although it was not written for that purpose. A careful examination of the district, even to the eye of an amateur, must convey (says Mr. Knox) to one the idea of magnitude as to its mineral formation. The strength of the walls on either side, the extent and width of the deposit, are certainly on a grand scale. One wonders at the lack of intelligence displayed in the endeavour to prospect the section. With one or two exceptions all the prospecting done has been by short tunnels near the top of the hills (the nearer the better seems to have been the idea), small cuts, scratchings, and cayote holes, where both time and money have been wasted. If the early workers in these mountains had intelligently taken into consideration that Nature had not done her work here on a small or limited, but on a mighty scale, that deep gulches and lofty peaks are but incidentals, and that with so large a "blossom" the rich regular deposits, in all probability, would be found below and not on the surface; and had they spent a thousandth part of the time and money in sinking the shafts in the proper places that have been spent in the foolish work mentioned above, this, Mr. Knox states, "would have been a camp second to none on the Pacific Coast." Mr. Knox was glad to see one company comprehending the situation, and sinking a large and fine shaft on the lode, looking as if they meant business. It is refreshing to see mining operations conducted on the same principles as are conducted our successful manufacturing interests. Certainly the latter would not erect his cards, jennies, and looms, and fail to furnish the motive power; or, if that were furnished, fail to give the stock with which to supply the machinery. The first question asked is—Is there stock with which to run the machinery if erected? And all other operations are based upon the answer to that query. Often the reverse seems to have been the rule. "If," says Mr. Knox, "a few years are added to my life I expect to see hundreds of stamps running. Being an Oaklander, and not interested in Alpine County to any extent, I may be supposed to look at the matter with unprejudiced eyes. Having had also many years experience in mining in Virginia, Nevada, and on the western slope of our Sierra Nevadas, and not being constitutionally lazy or averse to receiving ideas from anyone on any point that may advance our views on the science of mining and metallurgy, I will say in conclusion that I am still a learner."

EXCHEQUER (Gold and Silver)—No. VIII.—It seems necessary once more to state that Alpine County is situated on the eastern slope of the Sierra Nevada, and although within California geographically is geologically allied with Nevada, and that there are several mining districts of importance concerning which, by reason of their remoteness, less has been said up to the present time in the public press or heard from travellers than they deserve. As we have pointed out in our previous notices, the mines in this district up to a recent period have been mostly owned by poor miners and others, who, unable or unwilling to work themselves, have steadily refused to sell unless at highly exaggerated, in fact ridiculous, prices; tired of playing this part they at last offered inducements to Eastern and English capitalists, who found the mines totally undeveloped. This will account for the time which has elapsed since the discovery of the mines without the achievement of satisfactory results. The early history of the Exchequer Mine has many points of considerable interest. The company has been at work since February, 1870, when it bought the then undeveloped Buckeye No. 2 and Accacia Mines. A main tunnel was driven 900 ft., and the ledge sunk in 140 ft., and drifts prosecuted in various directions. Some very rich ore was extracted. For 60½ ft. the ledge, which runs N. 17° W., and dipped E. 76°; at that point the dip changed to 53°, which it maintained for 75 ft., when it flattened to 64°, and continued so to the 140 ft. level. About 200 ft. from the mouth of the main tunnel, in a cross-cut to the hanging wall, and 25 ft. from the foot wall, a vein was struck of pure white gold-bearing quartz, intermixed with veins of sulphurets, a piece of which yielded $2542 gold and $516 silver, equal to $2547 per ton. Having thus thoroughly opened the ground to a depth of 240 ft., the manager felt justified in recommending hoisting works and a main shaft for proper working. Since then machinery has been erected capable of sinking 600 ft., and buildings to accommodate any extension which deeper working may in time demand. The engine-shaft measures 10 ft. by 5 ft. in two compartments; the new shaft is 350 ft. further down the canyon than the main tunnel, and so placed that the floor of the hoisting works is about on a level with the bottom of the old incline, thus saving 140 ft. of sinking and hoisting. A strong tramway and chute convey the ore from the upper works to the ore-dump on the road 240 ft. below the tramway, whence it is hauled by teams to the mill on Silver Creek about four miles distant. The ore appears so free from base metal that several tons were experimentally treated with wet crushing and pan amalgamation without washing. Since then the development of the mine has been vigorously continued, and such valuable discoveries made as to ensure a remunerative career; in the meantime, the manager having given the different grades of ore a fair working at the mill, all to his satisfaction, has been actively engaged in determining the most suitable furnace to be adopted for its successful treatment. With this view he has proceeded to Peavine, where the mines yield an ore more fractious than from any district upon the Pacific Coast. Notwithstanding this, the furnaces there employed are running most satisfactorily, yielding large and continuous returns. Too much praise cannot be given to Mr. Chalmers for not prematurely deciding upon any particular description of furnace until he shall have personally satisfied himself as to their respective merits, so that as soon as really active operations are in progress there may be an uninterrupted course of prosperity, returning increasing dividends to the shareholders. We last week mentioned that there was to be seen at the offices of the company a rich stone of silver ore, just taken from the new stope in the 200 ft. level. Since then the stone has been assayed in bulk, with the following result:—

Assay Office, Hatton Garden, E.C., June 1, 1876.

Certificate of Assay for the Exchequer Gold and Silver Mining Company.

We have examined the sample, mineral, marked as under, and find the following to be the result:—Mark of sample, from 200 ft. stone, Exchequer, 200 ft. in from surface—Produce of gold, 2 ozs. 12 dwts. 6 grs. per ton of 20 cwts. of ore; silver, 243 ozs. per ton of 20 cwts. of ore. JOHNSON, MATTHEY, AND CO.

CONDES OF CHILI (Silver-Lead).—Advices from the manager confirm the original reports that the lode in the ends in the Isolina Mine is 9 ft. wide, yielding 90 ozs. silver per ton, and easy of extraction; the ore can be raised to surface at a cost of 3*s.* per ton. By the Iberia, which arrived at Liverpool on Monday, the first shipment was received of 150 tons of ore; this will be followed by another shipment of equal quantity by the steamer due in about 14 days hence. When it is considered that the company took possession of the mines only in February last, that the ore was raised by manual labour (there being no machinery on the mine), that it was transported on mule-back a distance of 38 miles, and brought from Chili to England in the short space of four months, the result can only be regarded as a substantial earnest of a successful future.

PATELEY BRIDGE LEAD MINES AND SMELTING WORKS.—This week's report is even more satisfactory than those of the two preceding weeks. The Lumb vein, in the south cross-cut, has increased in width to between 4 and 5 ft., composed of gossan, carbonate of lead, and blue ore, together worth 13*l.* per fathom. The vein seems to widen out very considerably in the sole of the level, "and to all appearances opening out into a very rich course of ore between this and the 20." As to Fielding's, we pointed out last week that the indications led to the expectation that a further improvement was imminent; this week we have to report that the vein has improved very considerably within the last day or two, being at present the full width of the drivage, yielding rich lead ore to the extent of 1½ ton per fathom. The rich course of ore that went down in the winze under the horse level is about 5 fathoms in advance of the present forebreast. "Therefore," says the manager, "we are certain of a good and rich vein up to that point." The same vein in the south-east end is 1 ft. wide, yielding 1 ton of lead ore per fathom. In the west cross-cut, in the 20, the indications point to the cut of a rich course of ore. Gillfield vein is from 5 to 6 ft. wide, producing 1 ton of lead ore per fathom; the stope in the back of this level will produce 1½ ton of ore per fathom.

ASSHETON AND WEST ASSHETON (Lead).—A private expert, whose opinion is entitled to every respect, has within the last few days fully inspected these mines. This authority informs us that the boundary shaft has been sunk 8 fms. below the 60; the ground continues rather hard, but precisely similar in character to the rock in which is found the rich lode in Tan-y-Bwlch in the 80 fm. level—the present deepest level in the mine. It may be here mentioned that the course of ore in Tan-y-Bwlch at this depth has been driven through for a distance of 30 fms., the present end (approaching West Assheton boundary) yielding no less than 5 tons of lead ore per fathom. The boundary shaft is expected to reach the 70 in about a fortnight. The 60 cross-cut is in 7½ fms., and the lode will be intersected in a few days; at this point it is confidently believed some valuable discoveries will be made. The 40 from boundary shaft will not be holed to Assheton until about the end of next week; by that time the 40 in the old mine (Assheton) is expected to be clear of water; it is considered unsafe to communicate till this has been done, as water may have been kept back by the flookan of the lode. In West Assheton there is a very good lode standing in the 40 cross-cut. The next two months' operation will throw great light upon the future of these mines. The general opinion throughout the district is that when the same depth shall have been reached these mines will successfully vie with Tan-y-Bwlch.

STOCK EXCHANGE GENERAL MARKETS.—In the early part of the week markets were quite disorganised under the influence of a variety of causes; with the present transition state of feeling there is an ample field for speculative adverse operators able to make good use of political rumours, of which the supply is unlimited when they can be made to order. One chief cause of depression, amounting at one time almost to panic, was the Eastern question. There is nothing, however, in the present phase of things to justify more serious disquiet, for the firm attitude of the English Government is more likely to prevent than precipitate a crisis, but there is a disposition to believe the worst, and the fall, particularly in the home market, was at one time most severe, the decline in Consols amounting to as much as ¾ per cent., making a total of nearly 2 per cent. in less than one week; for this there seems to be no sufficient cause. The war rumours, however, produce the greatest effect in this market, as there was a large speculative account open for the rise, and the pressure of sales to cover previous purchases intensified the downward movement.

RAILWAYS.—The war rumours have intensified the feeling of distrust previously excited by the bad prospects of trade and the unsatisfactory traffic returns. Quotations were affected by the failure of two firms of brokers, who had a very large account open; realisations in preparation for this occurrence no doubt had to do with some of the more important alterations in the earlier part of the week. The "backwardations" were lighter than usual, and in some instances disappeared altogether, showing a larger supply of stock. Nevertheless, the market grew firmer.

FOREIGN BONDS.—There would almost appear to be no limit to the fall in the foreign market; sounder securities have shown the fate of the more speculative, and there was a considerable reduction in both French and Italian Government stocks. Low as Turkish, Spanish, and Peruvian securities have fallen, they do not appear to have yet reached the lowest.

MISCELLANEOUS.—A reduction in Anglo-Egyptian Bank, Anglo-American Telegraph, and Telegraph Construction have been among the chief features in this department.

FROM A LONDON STOCK BROKER'S CIRCULAR.

Our markets in the early part of the week were in a very excited state, a general recovery from the panic prices of last week taking place on the announcement of the deposition of the Sultan of Turkey, the news being hailed with great satisfaction in most quarters; in foreign stocks the reaction was considerable, particularly in all Turkish and Egyptian securities. The Egyptian loan of 1873, after being as low as 33, rose to 39½, the rally in Turkish bonds varying from 3 to 6 per cent. These high prices, however, are not maintained, the markets being still in a very unhealthy state, and owing chiefly to the fact of there being little or no real buying on the part of the public to support them, are particularly sensitive to the many and various rumours respecting political and financial affairs continually floating about. The English railway market is most inactive, and prices very nominal, though earlier in the week some briskness was manifested, the favourable news from the East frightening the "bears," and the closing of accounts for the fall causing a rally in prices. There is little to note with regard to miscellaneous stocks and shares. The general business of the Stock Exchange is of a very limited nature—in a great measure due to absence of many members and the approach of the Whitsuntide holidays.—*Friday Morning.* J. Y. WATSON, JUN.

CORNISH PUMPING ENGINES.—The number of pumping-engines reported for April is 18. They have consumed 1830 tons of coal, and lifted 15,000,000 tons of water 10 fms. high. The average duty of the whole is, therefore, 55,300,000 lbs., lifted 1 ft. high, by the consumption of 112 lbs. of coal. The following engines have exceeded the average duty:—

Crenver and Wheal Abraham—Sturt's	90 in.	Millions 62·9
West Tolgus—Richard's	70 in.	59·8
Wheal Unity Wood—	70 in.	64·4
West Wheal Seton—Harvey's	85 in.	63·5
Ditto —Rule's	70 in.	65·6

SILVER-LEAD ORE.

Date.	Mine.	Tons	c.	qr.	lbs.	Price per ton.	Amount.	Purchasers.
May 23	Hornachos	24	16	0	25	£34 16 0	£863 8 6	Nevill, Druce.

LEAD ORES.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
May 20	Van Consols	25	£14 5 0	Burry Port Company.
24	Grogwinion	100	14 17 6	ditto
25	Nantiago	20	14 9 0	ditto
29	Cwm Elan	12	13 13 0	Nevill, Druce, and Co.
June 1	Van	350	14 8 6	Walker, Parker, & Co.
—	ditto	50	14 10 0	Panther Lead Co.
—	ditto	50	14 15 6	Burry Port Company.
—	ditto	50	14 17 6	St. Helen's Company.
—	ditto	50	14 14 6	ditto
—	ditto	50	15 12 6	Mining Co. of Ireland.

BLENDE.

Date.	Mines	Tons.	Price per ton.	Purchasers.
June 1	Van	50	£ 4 5 6	Villiers Spelter Co.
—	ditto	100	4 0 6	Kenrick and Son.
—	ditto	50	3 18 6	ditto

COPPER ORES.

Date.	Mine.	Tons.	Price p. ton.	Amount.	Purchasers.
May 27	South Darren	25	£ 3 19 0	—	—Vivian and Son.

GRINDING MINERALS.—The features of novelty in the invention of Messrs. REID and HUDDERSTY, of Doveholes, Derby, consist in making the grinding surfaces of cast-iron, the cutting edges being by preference formed in strips of chilled cast-iron imbedded in

grooves or furrows formed in the faces of the cast-iron grinding wheels, and so disposed therein as to give a scissors-like action, and thus more perfectly to perform their grinding functions, and to be more durable than the burr stones at present used for such grinding operations.

THE COAL AND METAL TRADES OF GERMANY.

The Secretary of Her Majesty's Embassy at Berlin has supplied the Foreign Office with two elaborate reports, the one on the finances of the German Empire, and the other on the commerce of the country, from the latter of which we glean the following information respecting the condition of the coal and metal trades of Germany. In dealing with Mr. MacDonell's statistics it will be necessary to bear in mind that "centners" and "marks" are respectively equivalent to hundredweights and shillings.

COALS.—There are four extensive tracts of coal in Germany:—

	Centners.
1.—The Westphalian, or Ruhr coal, which produced in 1873...	325,000,000
2.—The Silesian coal, of which there are two kinds, produced in 1873	201,000,000
	69,000,000
3.—The Saxon coal, produced in 1873	87,000,000
4.—The Saar coal, produced in 1873	

The great extension given to the metal and textile industries of Westphalia and the Lower Rhine is chiefly due to the proximity of coal. The works of Mr. Krupp in Essen, Haniel, and Tunke, and the cast-iron factory of Bochun are among the most important. The Upper Silesian coal nourishes the extensive productions of iron and zinc carried on in that province. In Lower Silesia and Saxony the mining industry is but slightly developed, and the coal of those districts is almost entirely used in the working of spinning mills and weaving establishments. The Saar coal is partly exported to France for railway purposes.

Westphalia chiefly produces caking coal, which has a tendency to coke. The Upper Silesian coal contains a large proportion of hydrogen, and is, therefore, principally used for gas. Lower Silesia and Saxony produce sand and caking coal. South Germany produces very little coal, but the factories are fortunately favoured with an abundance of water-power.

TIN.—This is not produced in Germany, its price is considerably lower than formerly, and it is no longer an object of speculation. The quantity imported *via* Stettin was, in 1873, 8333 centners, and in 1874, 10,312 centners.

COPPER.—The native production amounts to about 125,000 ctrs., and double that quantity of foreign productions is worked in the country. The importations from Great Britain *via* Stettin were, in 1873, 3026 ctrs., and in 1874, 7679 ctrs.

ZINC.—The zinc produced in Upper Silesia amounted to 650,035 crts. in 1872, 734,494 ctrs. in 1873, and about 800,000 in 1874; the exports in the corresponding periods were 72,505, 123,906, and 207,697 ctrs., of which in the last two years Great Britain received 82,876 and 126,047 centners. The exports of zinc in sheets and zinc wares, *via* Stettin, show a small and gradual rise, though the amount sent to England seems stationary. Upper Silesia ranks first in the production of this metal, and will, Mr. MacDonell thinks, probably continue to do so, notwithstanding speculative rumours to the contrary.

IRON.—From the official returns we learn that in 1872 there were 1341 mines in the German Empire, including Luxemburg, and that they employed 39,421 workmen; in 1873 their number had risen to 1558, and that of the workmen to 39,491. The quantity produced was:—

	Centners.	Value in marks.
1871	87,361,504	30,798,804
1872	117,913,472	42,371,802
1873	123,551,520	43,351,641

In 1872 and 1873 the quantities worked by the smelting furnaces were 98,635,575 and 99,179,352 centners respectively; and in the same periods there were produced 39,663,265 and 36,156,913 ctrs. of foundry pig-iron, refined ditto, raw steel iron, and castings of first smelting. The blasting furnaces yielded—

	Centners.	Value in marks.
1872	39,767,395	232,342,207
1873	44,811,492	248,614,761

The number of hands employed were 26,111 in 1872, and 28,129 in 1873. For the further working of pig-iron there were in 1873 780 iron foundries worked by 39,503 men, 1412 cupola furnaces and 116 puddling furnaces. The weight and value of the various articles manufactured at the works for refining, finishing, stretching, &c., using the proceeds of pig-iron, were as under:—

	Centners.	Value in marks.
1872	21,808,987	281,883,222
1873	21,113,442	276,537,583

We give in a comparative table some of the articles produced:—

	1872—Centners.	1873—Centners.
Railway rails and grooves	5,908,132	6,989,847
Railway axles and wheels	300,389	328,643
Facings for building purposes	1,656,613	1,528,297
Articles of wrought-iron	477,440	614,902
Iron wire	1,089,866	1,200,434
Black iron sheeting	1,339,462	1,558,392
White ditto	54,448	100,198
Rifled iron tubes and pipes	16,706	1,760
Various kinds of iron	8,036,060	7,369,819
Unwrought rails and hoops	1,678,132	1,441,360

The weight and value of various articles produced in ironworks, refining works, finishing and rolling mills from old iron, hoops, and pig-iron bars were as under:—

	Centners.	Value in marks.
1872	3,745,242	58,722,927
1873	3,727,727	54,201,918

The following comparative table exhibits some of the articles produced:—

	1872—Centners.	1873—Centners.
Iron rails an l fishing-plates	1,023,284	742,171
Railway axles and wheels	39,054	70,362
Moulding for building purposes	173,238	274,130
Wrought-iron articles	160,374	133,077
Iron wire	263,306	293,678
Black iron sheeting	350,908	228,653
White ditto	103,681	33,671
Rifled iron tubes and pipes	45,487	69,044
Various	1,293,343	1,820,693

N.B.—In the German official returns the articles produced from pig-iron are kept separate from those produced out of old iron, unwrought nails, &c.

The weight and value of articles produced from "Unwrought Steel and Steel of Cementation" were as follows:—

	Centners.	Value in marks.
1872	2,797,495	48,112,955
1873	2,184,516	37,921,077

The following were among the articles produced:—

	1872—Centners.	1873—Centners.
Steel rails and fishing-plates	1,070,938	846,932
„ axles and wheels	491,203	510,357
„ articles (wrought)	45,393	42,618
„ plates	25,900	13,628
„ various	523,967	427,158

The weight and value of cast-steel articles produced were as under:

	Centners.	Value in marks.
1872	3,542,072	56,801,592
1873	3,973,229	70,107,048

Amongst which were the following:—

	1872—Centners.	1873—Centners.
Cast steel rails	1,972,280	2,885,930
Railway axles and wheels	852,376	822,248
Articles of wrought steel	112,812	120,615
Cannons and projectiles	131,941	138,750
Sheeting and plates	40,551	38,671
Steel-wire	500	500
Various	394,855	361,609

In conclusion, we venture to quote the following figures, as being of considerable interest, and which Mr. MacDonell tells us were obtained by a person who has been engaged to ascertain the number of establishments which had discontinued working in 1875:—

	In blast.	Out of blast.	Total.
Coking furnaces	132	51	183
Charcoal furnaces	17	15	32
Coking stoves	1858	766	2624
Puddling furnaces	615	272	887
Heating ovens and furnaces	173	56	229
Welding furnaces	313	115	428
Fining furnaces	14	10	24
Refining furnaces	10	2	12
Stretching furnaces	51	6	57
Hand forge furnaces	705	115	820
Cupola furnaces	84	37	121
Converters	20	4	24
Siemens-Martin furnaces	11	7	18
Crucible steel	2	18	20

Mr. MacDonell appends to his report some tables of the imports and exports of the German Zollverein (Customs' League) for 1872, 1873, and 1874, which have been published by the Statistical Department at Berlin, but as he states that they are not considered correct we refrain from any attempt to analyse them.

NOVEL STEAM FIRE-ENGINE.

During the past week a very efficient form of steam fire-engine, constructed by Messrs. S. OWENS and Co., of Whitefriars-street, for the Russian Government, has been exhibited by them on the site of the old City Gasworks, and given proofs which demonstrate that very high results can be obtained with the machine, although its first cost is by no means high. The great advantages of the pump are that it is very compact, and of great strength; it will start at any part of the stroke, has no dead point, and works fast or slow with the same certainty of action; in fact, the certainty of its action under the most disadvantageous circumstances is a merit which will commend itself to all users of this class of machinery; it works steady, solid, and is always reliable; when put to the severest test it never fails in showing the superiority of working details and accuracy of finish. It can be relied on to work at any speed—one stroke in 12 minutes, or 200 strokes per minute—and will continue to work against a head pressure with certainty, thereby keeping it at a steady and uniform height. In the improved pump the main valve is placed in such a position as to be driven by a spring-ring steam piston; it is, therefore, operated with the same degree of certainty that an eccentric moves the slide valve of an ordinary steam-engine. The casting forming this auxiliary valve has three ports, which coincide in every position with the three ports of the main engine, thus forming an upward extension of the engine ports, on the upper seat of which the main valve slides. If the main piston should attain a velocity exceeding that of the piston which actuates the valve it would stake the cylinder head, but the movable valve seat makes such a contingency an impossibility, because having a mechanical connection to the valve-rod it is brought into such a position as to become the main valve, independent of the action of the main valve proper, and gives direct steam to the cushion, and reverses the engine.

A brief description will enable the general action of the pump to be understood. Suppose the piston to be moving to the right, the movable seat or auxiliary valve will then be at the extreme left, with the exhaust port open on the right hand stroke, and steam on to the left hand through the port. Directly the piston approaches the end of its stroke it operates a tappet, which communicates motion through a lever and rod to the movable seat and auxiliary valve. By this operation steam is at once given to the right hand side of the piston through a port, which it slightly opens in sufficient quantity to cushion the piston, and start it on its return stroke. At the same time steam passes through an auxiliary port, which communicates with the right hand plunger, at once opening the main slide valve and giving the piston full steam. The steam at the back of the plunger is exhausting through the auxiliary valve to the main exhaust. The valves are operated in the same way at the other end of the stroke, but in the opposite direction, thus giving continuous action to the steam-piston and to the pump-plunger. The plungers are prevented from striking the covers by an arrangement of ports and check valves.

The manufacturers have certainly succeeded in producing a finely finished and very efficient machine, and on Wednesday they showed that it could be worked at one stroke in seven minutes, and 50 strokes a minute, with equal facility, notwithstanding its simplicity of construction and non-liability to derangement. The engine manufactured for Russia has a steam cylinder 14 in. in diameter, a pump cylinder 8 in. in diameter, with a 24-in. stroke. It has a 6-in. section and a 5-in. delivery, carrying the 2½-in. hose. In the present trials two 70-ft. lengths of the ordinary brigade fire-hose is used. With 40 lbs. steam and the engine making 44 double strokes per minute two excellent streams were delivered to a calculated height of 130 ft. through 1-in. jets. These jets were changed for two of 1¼ in. diameter, when the water was thrown in two good volumes to a horizontal measured distance of 129 ft. Altogether the results were most satisfactory, and had the approval of a number of engineers and scientific gentlemen who were present.

The steam valve is a special feature in the pump, and combines all the necessary conditions that should be found in a direct-acting steam-pump—simplicity, durability, and positive action. It will also compensate for wear, and the several parts interchange and fit. It is a common slide-valve, understood by and familiar to every ordinary working engineer; when necessary it can be re-seated without being taken into the workshops, and is arranged to run under either high or low pressures, working as perfectly when the exhaust is connected with a condenser as when exhausting into the atmosphere. It does not depend upon the elasticity of steam to work it, consequently these pumps can be operated with absolute certainty by water-pressure, thus enabling them to start when filled with the cold water of condensation. Another important feature is the valve motion, by the use of which the pump takes a very compact form, and consequently ensures strength and power, requiring very little floor space; this short connection reduces the speed of the slide valve, thus enabling the pump to be run at the highest speed without thumping. Its action is certain at all speeds, and let the pressure be at any height the pump may run in fork without the ends striking the ends of the cylinder—perhaps the most severe test a pump can be submitted to. The tests on Wednesday were in every way satisfactory, and left no doubt as to the finish and efficiency of the pump.

THE COPPER TRADE.

Stocks in Europe:—	Tons.	
Chili ores and regulus, Liverpool & Swansea (equal to fine).	1,415	
Chili bars in Liverpool	7,740	
Ditto Swansea	1,253	
Chili ingots in Liverpool	398	
Ditto Swansea	—	
Foreign copper (chiefly Australian) in London	5,980	
Ditto arrived, but not yet landed	720	
English copper in London	50	
Chili bars and Barilla in Havre	3,955	
Other copper in Havre	600	= 22,111
Afloat and chartered from Chili to Europe (advised by mail):—		
Ores and regulus (equal to fine)	2,828	
Bars and ingots	5,836	= 8,664
Afloat from Australia (advised by mail):—		
Fine copper		975
Afloat and chartered from Chili to Europe (advised by cable):—		
Fine copper		3,450
Total		Tons 35,200

Leadenhall-street, June 1. HENRY R. MERTON AND CO.

The improvement noticed during April was lost during the past month, and the market was lifeless in the extreme. We quote Chili bars, 78*l.*; Wallaroo, 83*l.* 10s.; Burra Burra, 83*l.*; best selected, 84*l.*; tough, 83*l.*; India sheets, 80*l.*; regulus and ore 16s. to 15s. 6d. per unit. Charters for second half of April were 2200 tons.

The imports and exports by the returns of the Board of Trade for four months, January to April, were—

	1876.	1875.	1874.
IMPORTS.			
Ore.....Tons	21,385	12,950	15,492
Regulus	9,936	13,749	8,253
Copper	11,418	16,159	14,815
EXPORTS.			
Foreign raw	5,222	4,457	7,048
English raw	3,603	3,712	2,976
Manufactured, including yellow metal and brass	7,502	7,944	7,811

London, June 1. FRENCH AND SMITH.

The steady advance in the price of copper during April tended much to curtail the demand last month, consumers insisting that the advance could not be maintained. From the highest figure reached, about 2*l.* has been conceded for all descriptions. Considering the political agitation at work through out the past four weeks, that speculation is quite dead—all the trade buying from hand to mouth only—and that the Indian demand is still entirely in abeyance, it is a strong element in favour of this metal that the price fell so slightly. The future course of the market is, nevertheless, most uncertain. Apparently, however, no largely increased supply is looked for from any quarter, and this fact may be the index of prices. The West Coast shipments to April 17 are 12,118 tons, against 12,288 tons to same date of 1875; and the charters to May 16 are 16,200 tons, against 16,600 tons last year.

Imports of copper into England for the first four months of the following years, were—1872, 27,097 tons; 1873, 21,906 tons; 1874, 25,887 tons; 1875, 29,686 tons; 1876, 24,705 tons. The exports for the same periods were—1872, 12,378 tons; 1873, 18,491 tons; 1874, 18,417 tons; 1875, 14,910 tons; 1876, 15,764 tons. The position from June 1, 1875, to June 1, 1876, was as follows:—

	Price.	Stock on hand.	Stock, including afloat and chartered.
1875—June 1	£83 0 0	.....Tons 23,530	.....Tons 29,608
July 1	82 0 0	23,784	30,084
August 1	79 0 0	22,828	29,704
September 1	83 0 0	23,022	33,342
October 1	82 0 0	22,358	30,454
November 1	82 10 0	23,549	32,585
December 1	81 0 0	20,885	29,222
1876—January 1	81 10 0	20,583	28,978
February 1	81 0 0	20,702	27,843
March 1	76 0 0	21,963	30,217
April 1	77 0 0	20,734	30,982
May 1	79 10 0	21,169	31,988
June 1	78 0 0	22,682	30,997

And the comparative positions at the same date of the past four years with the present are as follow:—

	Price.	Stock on hand.	Stock, including afloat and chartered.
1872—June 1	£107 0 0	.....Tons 21,595	.....Tons 35,495
1873—June 1	84 0 0	3[illegible],942	38,984
1874—June 1	75 0 0	27,522	34,238
1875—June 1	83 0 0	23,530	29,608
1876—June 1	78 0 0	22,682	30,997

Leadenhall-street, London, June 2. HENRY ROGERS, SONS, AND CO.

THE TIN TRADE.

Our tin market has been somewhat firmer during the past month upon better reports from the London market, where several speculative purchases have been made at higher prices. This improvement was, however, but partially responded to here and during the last few days, holders were decidedly easier to deal with. The Dutch Trading Company's third sale in 1876, announced on the 10th ult., took place yesterday, when 29,318 slabs Banca were sold from 43¾ fl. to 45 fl., average 45½ fl. Next sale will probably be held towards the end of July. Banca has been in limited demand, buyers preferring to await the result of yesterday's sale. We think it is a matter of congratulation that the reserve price has been done away with, and we anticipate a better enquiry for the trade, now that the price is more on a parity with those ruling for other descriptions. During the past month a few transactions took place at from 49¼ fl. to 48¼. Since the sale there are sellers at 45¾ fl. Billiton has been more firmly held, the price advancing from 44 fl. to 45 fl., subsequently receding to 44¾ fl. There are now sellers at 44 fl. and buyers at 43½ fl.: 10,000 peculs will be offered for sale at Batavia on the 13th inst. According to an official statement the production of Billiton for 1875-76 (from March 1, 1875 until the end of April, 1876) amount to about 62,000 peculs against 63,000 peculs in 1874, 51,000 in 1873, and 54,400 peculs in 1874. Last year's production running over 14 months, the same shows a falling off compared with 1874. This decrease has been caused by continued drought during the closing months.

The position of Banca tin in Holland on May 31, according to the official returns of the Dutch Trading Company, was—

	1876.	1875.	1874.
Import in May.....Slabs	8,549	12,785	10,103
Total five months	29,488	23,759	37,707
Deliveries in May	4,700	12,133	4,100
Total five months	32,757	53,008	55,244
Stock second-hand	44,018	30,806	27,928
Unsold stock	44,606	75,142	89,135
Total stock	88,624	105,968	117,063
Afloat.....Peculs	6,000	11,460	12,050
Statement of Billiton:—			
Import in May.....Slabs	—	7,903	5,900
Total five months	35,579	33,752	28,700
Deliveries in May	8,179	13,956	11,100
Total five months	36,382	42,805	22,770
Stock	28,876	22,553	31,950
Afloat.....Peculs	15,000	10,000	12,000
Quotation { Banca	45½ fl.	50 fl.	58 fl.
May 31. { Billiton	44	48	56

These combined returns of Banca and Billiton for 1876, compared with those for 1875, exhibit—A decrease of the import for May of 379 tons; an increase of the import for the five months of 236 tons; a decrease of the deliveries for May of 413 tons; a decrease of the deliveries for the five months of 833 tons; an increase of the stock second hand of 610 tons; a decrease of the unsold stock of 955 tons; a decrease of the total stock of 345 tons; a decline of the quotation of Banca of 7*l.* 10s. per ton. The Government Returns for the months of February are as follows:—

EXPORT OF TIN FROM HOLLAND.

	February.			Two months.		
	1876.	1875.	1874.	1876.	1875.	1874.
Germany.....Tons	247	386	236	753	922	788
England	—	81	34	8	107	61
Belgium	85	176	66	337	383	265
France	12	24	25	61	82	35
Hamburg	27	42	49	110	98	104
United States	—	—	16	15	—	16
Other countries	5	21	15	11	46	34
Total	376	730	491	1295	1638	1323

Rotterdam, June 1. EBELING AND HAVELAAR.

In addition to a good many orders for export and home consumption, there was a strong speculative enquiry during the past month, and the price of Straits and Australian tin reached 76*l.* 10s., but when the feeling gained ground that probably the Dutch Trading Company might withdraw their reserve price at the sale on Wednesday, there was less strength in the market. The Dutch Trading Company did, in effect, withdraw their reserve, and the whole quantity put up for sale—29,318 slabs—realised an average of 45½ guilders, about 76*l.* in Holland. The price here is easier, and is 74*l.* 10s., both Straits and Australian. English was scarce during the greater part of the month. We refer to our usual figures:—

	1876. May 1.	1876. June 1.	1875. June 1.	1874. June 1.
Foreign in London, estimated at .....Tons	7,523	7,470	5,566	2,284
Banca in Holland, warrants	806	460	963	870
Billiton in Holland	1,158	902	705	970
Afloat for Europe, Straits, advised by mail and telegram	680	500	630	260
Afloat, Australian ditto	1,500	1,500	1,100	1,00
Afloat, Billiton for Holland	930	950	600	720
Banca in Trading Co.'s hands, unsold	2,044	2,510	2,319	2,700
Banca afloat	312	575	716	720
Total	14,753	14,467	12,929	9,714

June 1. FRENCH AND SMITH.

A rise of 5*l.* to 6*l.* per ton took place in this metal last month, but about half this increased value was lost on the last day of May, by reason of the heavy fall in the price of Banca tin at the auction which took place on that day, when 29,300 slabs were offered at and yielded only an average of 45¼ guilders, equal to 77*l.* London. A good deal of the buying was evidently speculative, stocks still large, and the tin-plate trade more depressed than ever.

June 2. HENRY ROGERS, SONS, AND CO.

LUBRICATING AIR OR GAS PUMPING MACHINERY.—The invention of Messrs. AAGLESHAM, of Kilmarnock, and RIGG, of Bonnyrigg, consists essentially in the application and use of a jet of water led in by the air, preferably in the form of a spray, to the cylinders, chambers, or ducts of air or gas-forcing and pumping machinery through which it passes, so as to moisten and cool the inflowing air, and thus cool the whole apparatus, as well as lubricate the working surfaces of the cylinders and pistons. The means or mechanism for effecting this consists in the application of a valve or valve chest or jet apparatus connected to a water pipe at its inlet branch, and at its outlet branch to the air cylinder, or ducts, or chambers, drawing in the air or gas thereto, so as to regulate the flow of the jet of water, which by a rose on the said outlet branch forms it into a spray as is drawn in by the suction of the air or by a forced jet to mix therewith, each stroke of the piston in the case of reciprocating air-pumps, but in rotary pumps it may flow in a constant spray jet by the regular motion of their rotating pistons.

ARTIFICIAL HEALTHSTONES.—Mr. J. HALL, of Wrays, Horley, Surrey, proposes to form an artificial hearthstone from the green sandstone found above the Gault clay in the neighbourhood of Bletchworth, in Surrey, and in other localities. The sandstone he reduces to powder by grinding it with edge runners or otherwise, and after mixing it intimately in a comparatively dry state with portland cement, he at once moulds it by pressure into blocks of any size.

TRACTION ENGINES FOR COMMON ROADS.—The novelty of the invention of Mr. J. RICHARDSON (of Messrs. Robey and Co.), Lincoln, consists in the whole of the working parts of the engine being contained within or bolted to one cast-iron frame, for applying the power in the best manner for traction purposes.

The following report was received too late for insertion in its proper place:—

WEST MILWR.—Wm. Francis, May 31: In sinking the sump on the vein below the 70 yard level a hard knot of ground has come in, and on account of good ventilation being required for continual blasting, I have put the men a portion of their time to continue driving the 70 yard cross-cut south towards the Milwr vein, being now within 20 yards of the line of its direction. Since resuming this we have cut a nice looking feeder containing a little lead ore, and appearances are very favourable at present in this driving.

HOLLOWAY'S OINTMENT AND PILLS: DISEASES OF THE MOST FORMIDABLE and chronic characters have been cured by Holloway's remedies after the usual external and internal treatment has signally failed. Ulcerations which have proved themselves incurable by any other known means have healed kindly under the purifying and regenerating influence of this excellent ointment. Sprains, stiff joints, contracted muscles, and glandular swellings can be most safely and effectively treated by Holloways ointment and pills, which can do no harm under any circumstances. Neither of these medicaments have anything deleterious in their composition; both are essentially purifying and strengthening in their nature. While the ointment reduces sores to that healthy condition preparatory to healing, the pills improve the digestion and expel impurities.

Registration of New Companies.

The following joint-stock companies have been duly registered:—

TYLA COCH STEAM COLLIERY COMPANY (Limited).—Capital 100,000*l.*, in 500*l.* shares. To acquire the Tyla Coch Collieries, in the parish of Ystradyfodwg, Glamorgan, and to carry on business as colliery owners, brickmakers, &c. The subscribers are—G. Worthington, Cardiff, gentleman, 10; G. C. Williams, Llanrwmney Hall, Cardiff, Esquire, 20; B. Matthews, Glan Ely, Cardiff, gentleman, 10, T. Forster Brown, Cardiff, engineer; G. Fisher, engineer, 10; Thos. Jones, Porth; Glamorgan, colliery proprietor, 20; T. G Hyde, Worcester, gentleman, 10. Registered without articles.

BALA LAKE SLATE AND SLAB QUARRY COMPANY (Limited).—Capital 20,000*l.*, in 5*l.* shares. To acquire the Bala Lake Slate Quarry, parish of Llanwchllyn, Merioneth, according to the terms of an agreement made between W. Owen, Bala, A. A. Passingham, Bala, T. B. Dawes, Bala, and E. Hammond on behalf of the company. The consideration is 3000*l.* in cash, and 1000 fully paid-up shares. The subscribers are—T. Hames, 25, Finsbury-place, no occupation; J. Graham, 28, Threadneedle street, merchant, 3; W. White, 25, Finsbury-place, assayer, 3; W. Thomas, High Halden, Kent, freeholder, 4; E. Hammond, The Poplars, Worth, freeholder, 5; W. Harvey, 7, Torrington square, no occupation, 3; Pembroke Marshall, 35, Somerset Buildings, auctioneer. Mr. W. J. Sennett will be the London manager of the company.

WILLIAM MATHEWS AND COMPANY (Limited).—Capital 15,000*l.*, in 100*l.* shares. To acquire the Corbyn Hall blast-furnaces and works at Kingswinford, Stafford, formerly the property of Mr. W. Mathews, and to carry on business as ironfounders, smelters, &c. The subscribers (who take one share each) are—B. St. John Mathews, Pontillas Court, near Hereford, gentleman; W. Barrows, Hagley, Worcestershire, ironmaster; W. Madeley, Kingswinford, Stafford, managing clerk; W. Barlow, Persnett, Staffordshire, furnace manager; W. Wright, Hash Hill, Worcestershire, engineer, 10; A. Barrows, Hagley, ironmaster; H. H. Barrows, 42, Cambridge street, gentleman. The directors are—B. St. John Mathews, W. Barrows, W. A. Barrows, H. H. Barrows, W. Barlow, and W. Madeley, the qualification being five shares.

BIRMINGHAM TRAMWAYS AND OMNIBUS COMPANY (Limited).—Capital 60,000*l.*, in 10*l.* shares. To purchase the goodwill and business of the Birmingham and District Tramway Company (Limited), together with the goodwill of the business of Mr. W. Mayner, of Handsworth, omnibus proprietor. The subscribers are—W. Barnsley, 52, Snow Hill, Birmingham, 50; E. Tailby, Church Hill, Handsworth, 50; F. A. Brandlin, Lower Loveday-street, Birmingham; E. Short, 41, Great Charles-street, Birmingham, 20; J. Wilson, South road, Handsworth, 20; J. Matts, Seymour Villa, Handsworth, 20; T. Bragg, Handsworth, 20.

MORECAMBE BATHS, WINTER GARDENS, AND AQUARIUM COMPANY (Limited).—Capital 40,000*l.*, in 1*l.* shares. To construct baths, winter gardens, &c., at Morecambe, Lancashire The subscribers are—T. Firth, Old Ashfield, Bradford, 50; G. Hodgson, Bradford, 200; J. Craven, Thornton, Bradford, 100; C. Turner, Idle, Calverley, 100; W. L. Bunting, Thornton, 100; J, Waugh, Bradford, 100; W. George, Bradford, 100.

HERCULEAN ECONOMIC TREASURY AND SAFE COMPANY (Limited).—Capital 200,000*l.*, in 1*l.* shares. To erect safe and strong rooms, &c The subscribers (who take one share each) are—W. Milner, 3, New Market place, Manchester; R. Milner, 19, Claremont-road, Manchester; E. S. Jackson, 33, George-street, Manchester; W. H. Ogden, 3, Old Millgate, Manchester; J. J. Kerrish, 174, Upper Brook-street, Manchester; J. Fortin, Manchester; A. Paton, 35, Upper Brook street, Manchester.

LONDON ROLLER SKATE AND RINK COMPANY (Limited).—Capital 20,000*l.*, in 10*l.* shares. To acquire patents in connection with roller skates. The subscribers (who take one share each) are—J. H. Greathead, 2, Storey's Gate, S.W.: C. J. Bellamy, Whitehall Club; J. W. Sykes, 31, St. Swithen's lane; H. Anstey, jun., Conservative Club; W. Hepworth, Anglesey, Hants; G. E Martin, 91, Talbot-road, W.; B. C. Board, Brondesbury Villa, Kilburn

CLAYTON ANELINE COMPANY (Limited).—Capital 12,000*l.*, in 10*l.* shares. To manufacture and sell benzole, aneline, and other products of coal and coal tar. The sub-scribers are—A. W. Ashwood, 42, Spring Gardens, Manchester, 5; G. Clough, Spring street Mill, Bury, 10; S. Charlton, Manchester, 50; J. Farmer, Salford; W. Jepson, Salford; C. Dreyfus, 30, Faulkner-street, Manchester, 5; W. Mather, 32, Corporation-street, Manchester, 10.

ROSENDALE MUTUAL FIRE INSURANCE GUARANTEED.—This is an unlimited company, the object being the mutual insurance of property. The subscribers are—David Lord, Stackstead; G. Shepherd, Holmes Mill, Bacup; Thos. Barrowclough, Green Mill, Bacup; T. E Best, Height Carnhill, Bacup; C. Spencer, Victoria Works, Cloughfoot; J. Hoes, Whitworth; J. Metcalf, Bacup.

THE WEEK.

SATURDAY, MAY 27.—There was every appearance of a panic throughout the day, especially in the foreign market, and at the close some very wide fluctuations were apparent. Spanish Six per Cent. dropped 10 per cent., and there was a general fall of 2 in Russians. Many jobbers now fear to operate in those bonds, and when challenged excuse themselves by saying they have no "book" in them. Egyptians went down to 37½, but when the House was closed at two o'clock foreign dealers grouped themselves in Throgmorton-street, forming an open bourse, and made bargains until half-past three They were nearly all buyers, and with them Egyptians closed 37¾ to 38, some in their eagerness to get on offering to make a 16th price in Khedives. In railways the greatest fall was in Brighton A, which gave way no less than 4½ per cent., closing 93½ to 93¾. Great importance was attached in this market to the unusual fall in Consols (10s.), and all manner of war rumours were current.

MONDAY.—First day of settling. Under the influence of a rise of ¾ in Consols, railways were buoyant in the morning; and, though later on there was a relapse, the variations were evenly balanced, Metropolitan and Metropolitan District advancing as much as Dover A, and some others fell. Foreign Bonds again gave way, especially Russian. Egyptians were dealt in at 35¾ and 34⅞, closing at 36. Argentines were dull, the 1871 Loan being at one time 42½. Spanish Six per Cents., however, recovered a large portion of Saturday's fall. The rate for carrying over foreign stocks averaged 3 per cent. Some very severe backwardations were exacted on several railway stocks, notably Midland and Berwick—as much as 10*l.* per thousand was paid on the latter. They were carried over at 150¼, fell at one time to 149, sellers, and closed 149⅝ to 149⅞. The failure of a firm (two partners) of brokers was announced early in the morning, with liabilities of about 21,000*l.* They are understood to have acted as agents for a country broker, who was engaged in operating for a rise in Anglos and Egyptians.

TUESDAY.—Under the influence of further sales prices were all lower in the morning. Egyptians falling to 32¾, and Brighton, A, to 91¾, but soon after noon a magical change was wrought by the announcement that the Sultan had been deposed. It fell like a bombshell among the "bears" busy on making differences; many immediately turned their books round, and their calls to buy were heard far outside the House. So wildly did they bid that Egyptians were soon forced up to 39, while Turkish Fives, which had been dealt in at 9¾, rebounded to 14—a rise of 40 per cent. A pause followed in the middle of the afternoon, when it was sought to explain away the report by saying for deposed read "indisposed," but towards the close excited buying again set in, and prices left off very firm. The news was known at Paris before it was known here. There and at all the capitals of Europe the Bourses showed a marked a marked recovery.

WEDNESDAY.—There was a firm tendency in the morning, and most of the railways and foreign bonds moved further upwards, but the rise was lost to a great extent in the afternoon, when it was rumoured that Russia had withdrawn her ambassador from Constantinople; further details, too, were waited for respecting the Sultan's deposition. A large number of dealers left early in the day for Epsom. The settlement was completed with the addition of only one more failure for a moderate amount. The rise in Hungarian and Russian bonds was maintained, but Egyptians after being 39*l.* closed finally 36½ to 36¾, and Turkish Fives fell from 11¼ to 13. It remains to be seen, as stated by a contemporary whether the unpaid coupons are of more value than the dead leaves of last autumn. As before mentioned, railways lost the morning's improvement.

THURSDAY.—Very little business was done, and it is not expected there will be any activity until after the Whitsuntide holidays. Egyptians fell to 35¾, and all the Russian and Hungarian issues were lower. Turks were dull, it not appearing that the change of monarchs is likely to immediately benefit the bondholders. The Fives closed 13⅜ to 13⅝. In railways, Lancashire and Yorkshire receded to 127½; North British and Great Western, ½; and Brighton, ¼. Metropolitan, 95½ to 95¼; District, 40⅞ to 41⅛; Dover A. 118½ to 118¾; Pawson, 4½ to 5; Direct Cable, 9⅛ to 9½; Globe, 4⅛ to 4⅝. Mines were quiet, but generally firm, the exception being Carn Brea, which fell a further 10s. Assheton, 1 to 1½; East Van, 9½ to 10; Pateley Bridge, 4 to 4½; Wheal Grenville, 1¾ to 1¾; Cape Copper, 38½ to 39½, Last Chance, ¼ to ¾.

FRIDAY.—The markets open dull, some importance being attached to the Premier's remarks last night in the House of Commons as to the situation being still critical. Turks are down to 12¾, and Egyptians are offered at 35. Berwick, 150¾ to 150½; Brighton A, 94¾ to 95⅛, each a fall of ¾. Dover A, however, are stronger at 111¾.—*Two o'Clock.*—The changes are quite unimportant, but the markets are something firmer on the whole, although Turks are offered at 12¾. Midland and Brighton A have each improved ¼, and Great Western ½.—*Four o'Clock.*—There is a further slight improvement. Turks are 12¾ to 13; and Egyptians, 35 to 35¼. Brighton A and Great Westerns are now the same as last night, while Dover A and Sheffield show a slight advance. Perus rather offered.

Birchin lane, June 2. FERDINAND R. KIRK.

DRILLING AND BORING.—Messrs. CANARD and MOUILLERA, Boulevard de Strasbourg Paris, have patented an invention which consists of an apparatus by means of which the boring and clearing may be effected at one operation.

PUMPING MACHINERY.—Mr. J. EAGLESHAM, of Kilmarnock, coalmaster, and H. RIGG, of Bonnyrigg, colliery manager, have patented a new apparatus for cooling and lubricating air or gas-pumping machinery. The invention consists essentially in the application and use of a jet of water led in with the air, preferably in the form of a spray, to the cylinders, chambers, or ducts of air or gas, forcing and pumping machinery through which it passes, so as to moisten and cool the in-flowing air, and thus cool the whole apparatus, as well as lubricate the working surfaces of the cylinders and pistons. The means or mechanism for effecting this consists in the application of a valve or valve-chest, or jet apparatus connected to a water-pipe at its inlet branch, and at its outlet branch to the air cylinder, or ducts or chambers, drawing in the air or gas thereto, so as to regulate the flow of the jet of water, which by a rose on the said outlet branch forms it into a spray as it is drawn in by the suction of the air, or by a forced jet to mix therewith, each stroke of the piston in the case of reciprocating air-pumps; but in rotatory pumps it may flow in in a constant spray jet by the regular motion of their rotating pistons.

Mining Correspondence.

BRITISH MINES.

ABERDAUNANT.—S. Toy, May 31: The men are making good progress in driving No. 2 adit level east: the lode is very large, but at present poor, and discharging water freely. In No. 1 adit, driving east, the lode is large, and of a kindly appearance, but is not producing any lead at present. The new shaft 4s down 6 fms. 3 ft.; we shall finish timbering it to the bottom to day, and will resume the sinking of the shaft to night.—Deep Adit Level: I find in clearing the stuff from the old cross cut south, and towards the new shaft, that it is higher than the other level that is driven on the course of the lode, and that we shall have to stope it deeper and make it wider, so that we can put in the tramroad and wagon with us; this will take the men about a fortnight to finish, when they will commence to drive the same cross cut south to get under the shaft. In the east part of the sett (Crowlwm) there is no change during the week worthy of notice, the men are making good progress in driving the cross cut towards the south lode. All points throughout the mine are being worked with vigour.

ASSHETON AND WEST ASSHETON.—J. Craze, June 1: The boundary shaft is down 8½ fms. below the 60; the ground for the last week or two has been unfavourable for progress, but we expect to get down to the 70 in a week hence. The 60 cross-cut is in 9 fms., and we hourly expect to cut the lode. We have effected a borer hole communication between the rise in back of the 50, and a winze in bottom of the 40.—Assheton Proper: The men are making fair progress in clearing the 40, and we expect to see the forebreast this week. We have set two tribute pitches in the back of the 40, east of Browne's and west of Mawr shafts, at 2*l.* 10s. and 6*l.* per ton respectively. We have also two pitches in the 8 fm. level at 7*l.* and 8*l.* per ton respectively. We purpose putting on some tutwork and tribute bargains in course of a few days. The pumping engine and all the other machinery are in good order, and working well.

BEDFORD UNITED.—W. Phillips, June 1: South Lode: On account of the continuance of dry weather we have been unable to proceed with operations in this part of the mine, but in the course of a short time we hope to get the rise cleared to surface, which will afford ample ventilation to admit of the ground already laid open being taken away advantageously, and for further exploratory works. Most of the points of operation on the north lode continue to be of the same value as reported last week.

BRONFLOYD.—T. Kemp, June 1: Setting Report: No. 3 Shaft, North Lode: The 110 end has been further extended west in the past month 3 fms. 1 ft. 10 in.; total distance from shaft, 13 fms. 4 ft. 7 in. The winze which is being sunk under the 96 is about 7 fms. in advance of this level. A contract has been set to six men, to extend this drivage under the point of winze, at 200s. per fathom. The part of the lode opened on here is killas and spar, carrying nice stones of ore—saving work for dressing. Owing to the main part of the lode being so exceedingly hard we deem it advisable to keep the drivage more towards the footwall side of the lode, where the ground is more favourable for progress, and will enable us to effect a communication with the winze above referred to at a much earlier date, and when done we shall then be in a position to strip down the lode to full width in order to prove its value, &c. The winze in the 96, to the west of shaft, is down 2 fms. 1 ft. below the level, and a contract is also set to six men, to sink this winze to the 110, at 250s. per fathom; the part of the lode carried thereby has within the last few days improved, now worth 10 cwts. of ore per fathom. Four men to stope the lode over the back of this level, to the west of Joshua's winze, at 80s. per fathom; lode worth 18 cwts. of ore per fathom, ground very tight for breaking. The stope to the east of Joshua's winze, over this same level, at last measuring day was set to twelve men, for two months, at 55s. per cubic fathom, therefore their contract will not terminate before the end of the present month; the lode here is much the same as when last reported, worth from 12 to 14 cwts. of ore per cubic fathom. Eight men to stope the lode over the back of the 73, to the east of shaft, at 65s. per cubic fathom: the lode is looking better, now worth fully 1 ton of ore per cubic fathom.—No. 2 Shaft, Middle Lode: Two men to drive the 52 end, west of Lloyd's cross cut, at 190s. per fm., which includes the removal of stuff; the part of the lode opened on by this drivage is presenting a better appearance, and at times producing excellent stones of lead ore, and judging from the kindly character of the lode we ought to have an improvement here. Two men to drive the 40 end, east of shaft, at 100s. per fm., which includes the removal of stuff; the part of the lode carried by this drivage is much the same as for some time past, composed of carbonate of lime and killas spotted with ore. I am sorry to say from the continual drought our surface water is very limited, which very much impedes our dressing, &c., however, I hope we shall have a change shortly, when we will endeavour to pull up the lost time. Machinery in pretty good order.

CARGOLL.—John Jennings, May 31: Setting Report: To drive the 24 east of Doctor's shaft, by six men, at 4*l.* per fathom; the lode is composed of flookan, prian, quartz, mundic, and a little lead occasionally, and the ground is much easier for driving. To drive the 11 east of Bowyer's shaft, on the south lode, by four men, at 3*l.* per fathom; the lode here is not quite so good as it was, now producing ½ ton of silver-lead per fathom. No doubt this end will improve again soon. This end is communicated to the winze sunk from the adit. To drive the 11 west of crosscut, on the south lode, by two men, at 3*l.* 10s. per fathom; the lode in the end just now is poor, but there is a very good lode of lead gone done down in the bottom of the adit level, which seems to be dipping west. To stope the bottom of the adit, east of winze, on the south lode, by four men, at 1*l.* 15s. per fathom; the lode will produce ½ ton of silver-lead per fathom.—Bowyer's Shaft: We have completed cutting the plat in the 11, and have cased, divided, and put in footway, &c., from the adit to this level, and have set the shaft to sink below the 11, by six men, at 10*l.* per fathom; this shaft is sinking in the country, and when reached to the 24 we shall have to cross-cut south to intersect both the north and south lodes, which will not be far distant; and, judging from the appearance of the lode gone down from the bottom of the 11—which will produce 1 ton of silver-lead per fm.—I have no doubt but that we shall have a very good course of lead in the 24. To sink a new winze below the 11, east of Doctor's shaft, by four men, at 3*l.* 10s. per fathom; this winze is being sunk to prove the lode, and for ventilation to the 24 end east; at present the winze is poor for lead. To drive the adit end west of Boyle's shaft, on the main lode, by two men and one boy, at 2*l.* 15s. per fathom; the lode here is very promising, and continues to produce good stones of mundic, blende, and occasionally veins of lead in the flookan. To sink a new adit shaft from surface, upon the main lode, by four men, at 45s. per fathom; this shaft is being sunk for ventilation and hauling stuff, and for further prosecuting the adit end west.

CWM DWYFOR (Copper and Silver Lead).—J. Jewell, June 1: Stewart's Shaft: The lode in this shaft, sinking below the 10 fm. level, is 4 ft. wide, 3 ft. of which is composed of lead, sulphur, and carbonate of lime—a fine looking lode. The present depth of the shaft is 5 fms. 1 ft. below the 10, sinking by six men.—Level on No. 4 Lode, South: In driving this level east of Stewart's shaft the lode is 18 in. wide, but poor; it, however, appears to be getting more settled; re set to two men, at 12*l.* per fathom.—Level on No. 3 Lode, South: In this level, driving east of the south cross cut, we are dressing the lode, and shall continue to do so for the next week; by that time I believe the north branch will unite with the south or main part of the lode, which when last taken down was 2 ft. wide, and yielded fully 10 cwts. of silver-lead ore per fathom—a most promising lode; driving by four men, at 12*l.* 2s. per fathom. We have crushed a good pile of leadstuff, and are now getting ready another parcel of ore for the market.

CWM ELAN (NEW).—W. Goldsworthy, May 27: There is no alteration to note in any part of the mine since last report.

CWMYSTWITH.—May 31: The lode in Michell's level west, on the new lode, is 4 feet wide, worth at present 10 cwts. of lead ore per fathom. No alteration worthy of remark in any other part of the mine since our last setting. We now have a great many hands employed in clearing ground, rising, and tramming stones, &c., for new machinery.

DE DROKE.—J. Phillips, May 31: During the week steady progress has been made in Wilson's shaft sinking below the 25, and it will soon reach a depth where the lode will meet it, or be within easy reach by a short cross cut. The 25, driving east, is still in a fine looking lode, worth about 20*l.* per fathom. The stopes east of the rise, and west of the junction, are without any alteration in appearance or value. The dry weather makes water scarce here; we have sufficient for pumping, but are rather short for drawing and other purposes. I hope, however, by the time I have named to get about a sampling of ore.

DENBIGHSHIRE CONSOLIDATED.—John Pryor, June 1: In the 112 west, on Parry's lode, we have a fine lode, about 3 ft. wide, composed of spar, clay, and a little ore. The rise in the back of this level is producing some very good stuff. I expect a very important change here before many days, as there is a great sound in the workings as if we were coming into open ground. The end in the 112 east begins to appear as we would wish to see it; the ore in it is improving every day both in quality and quantity, and before many days we hope to be able to inform you that we have a rich end.

DUBBY SYKE.—W. Tallentire, May 26: We commenced this week to take down the vein here referred to in last week's report. The vein is a good width, fully 9 ft. wide, composed of barytes, mixed with lead ore. We have got some strong good bouse or ore stuff this week, and are pushing the old level forward as well.—Shooting-box Level: Good progress is being made in the rise east. We have been greatly troubled with water, but it is now almost dry.

EAST BASSET.—R. Pryor, E. Edwards, May 31: The lode in the 40, driving east of cross-cut, is without change to notice since last week. The lode in the stope in the bottom of this level is somewhat improved, being now worth 12*l.* per fathom, with a good appearance.

EAST CHIVERTON.—R. Southey, June 1: Since the last general meeting we have intersected the south lode in the 74, and are pleased to say it presents a very kindly appearance, being 3 ft. wide, producing good stones of silver-lead ore. We have now about 30 fathoms to drive west to get under the shoot of lead met with in the 64, and shall at once commence pushing forward the end with all possible speed by six men, at 3*l.* per fathom. We are also continuing the cross cut south to see if there is any limb or part of the West Chiverton lode gone off in that direction; driving by four men, at 8*l.* 10s. per fathom. In the north cross cut, at the 64, driving to intersect the counter lode, there is not much change since my last; the ground is just of the same character as then reported. Driving by a full force, at 4*l.* per fathom, and should the ground continue as it is at present we shall undoubtedly meet with the lode on or before the next meeting.

EAST DARREN.—May 30: In the 130, west of Skinner's shaft, the lode is 1 yard wide, stiff for exploring, and unproductive. In the winze sinking under the 116, the same is being carried down off the lode in a good channel of ground, composed of a blue clay slate, strings of carbonate of lime, showing occasionally spots of lead ore. In the drift, east of winze under the 92, the lode is 4 ft. wide, and at present disordered by a soft channel of ground, and unproductive, but we look forward to an early improvement. In the cross cut south at the 92, small strings of ore are occasionally met with, and we hope soon to meet with the south part of the lode. The stopes and pitches throughout the different levels are without change to remark since last reported on. Our machinery is in good working order. We have had a few light showers of rain, but not sufficient to much increase our supply of water, which is becoming small for our regular work in drawing and dressing, but the same is being kept going with all progress possible, and we have to-day stamped 40 tons of silver lead ore.

EAST VAN.—W. Williams: I am happy to inform you that we are cutting lead in both cross cuts, although not sufficient to value; but a few days may produce great changes. We have have crossed south 13 ft., and cut a strong feed of water, which will favourably affect the shaft. We have crossed north 10 ft.; the end to-day begins to show signs of water. We are making good progress in sinking Tempest shaft.

GAWTON COPPER.—G. Rowe, G. Rowe, jun., May 27: We have suspended the sinking and commenced a drivage east at the 127, where the lode is producing fine stones of ore. The lode in the 105 east is improving in character, yielding very strong mundic with good stones of ore. The lode in the 82 east is not quite so good for ore to day, although of a very kindly appearance, with good stones of ore. The lode in the stopes at the different levels throughout the mine are yielding their usual quantity of ore, and the tribute department without change. We sampled yesterday, commuted, 172 tons of copper ore.

GLASGOW CARADON CONSOLS.—Wm. Taylor, Wm. J. Taylor, May 30: South Lode: In the 78 east the ground is still favourable, but the lode not looking quite so well, now worth about 12*l.* per fathom. We expect this will soon improve, as we have a fine course of ore in the winze coming down from the middle level about 7 fms. in advance of this end. The 78 west, on south branch, is worth 8*l.* per fathom.—Middle Level: In this level east the lode is further improved, worth 32*l.* per fathom, and easy for driving. The winze in the bottom of this level is worth fully 30*l.* per fathom. The cross cut from this level, west to Harvey's north lode, is not yet holed to the winze on that lode, but we are expecting to do so daily; this will open out tribute ground rise in the back of the 65 on Harvey's north lode worth 6*l.* per fathom; we expect to hole through to the tribute pitch this month. No change in the 52 east, on canuter lode. The stopes and pitches throughout the mine continue to look well, varying in value from 10*l.* to 25*l.* per fathom.—New Shaft: Operations here are being pushed on as fast as the nature of the work will admit. We shall give the computed quantity of ore for our sale next week; we expect it will be at least 260 tons.

GLYN.—J. Roach, May 29: The engine-shaft is stiff for sinking; the men are working well, and I hope to get it the required depth against the time named. The 15, east of cross cut and rise above it are still in profitably productive ground; therefore, I deferred cross-cutting to the south part of the lode, but will do so as soon as opportunity offers. The winze under the 15 west is fast improving in appearance; all indications are favourable to our next level being found rich for lead.

GOGINAN AND LEVEL NEWYDD.—May 30: At the 120, west of cross cut from Bryn Pica shaft, the lode is without any change of moment, and good progress is being made in driving. The 120, east of western shaft, is in a large lode, and the part carried is disseminated throughout with lead ore, producing good work for the dressing floors. In the same level, west of shaft, there is a strong lode, containing spar, blende, and clay-slate, with good branches of lead ore, worth fully 1½ ton of the latter per fathom. The winze below the 110 fm. level, 80 fathoms west of Bryn Pica shaft, is down 4½ fathoms. Lode in same 4 ft. wide, intermixed throughout with lead ore, worth from 10 to 12 cwts. per fathom. Fair progress is being made in the winze sinking below the same level, 35 fathoms west of Bryn Pica shaft, where the lode will produce from 18 cwts. to 1 ton of ore per fathom. The tribute pitches will produce on an average 13 cwts. of lead ore per fathom. At surface everything is being proceeded with regularly, and all points throughout the mines are pushed on as fast as possible. The 34 tons of ore sold yesterday realised 18*l.* 5s. per ton.

GORSEDD AND MERLLYN CONSOLS.—W. Edwards, June 1: I cannot report to you any change since my last. You may rely upon us using every exertion to make up lost time in the sinking of the pit. The weather is all in our favour.

GREAT DYLIFFE.—Edward Rogers, May 31: Dyliffe Lode: The engine-shaft is sinking by the side of the lode; it will not be prudent to cut into it until we get several feet below the level, in case of an influx of water. At the 120, driving east of the shaft, the lode is worth 4*l.* per fathom. In the rise in back of this level the lode is worth 10*l.* per fathom. In the winze in bottom of the 105 no lode has been taken down. At the 45, west of winze, the lode is 5 ft. wide—a mixture of blende, copper, and lead, worth in the aggregate 18*l.* per fathom. At the 40, driving east of boundary shaft, the lode is a little improved, worth at present 8*l.* per fathom. The other parts of the mine are the same as last reported.

GREAT RETALLACK.—J. Harris, May 27: Setting Report: The cross-cut to drive south at the 40, through the lode, by two men, at 40s. per fathom for the month, or cut through the lode. We are meeting with stones of blende, but not enough to value. Two pitches at the back of the 40 to three and two men each, at 35s. per ton of best blende. Two pitches at the 30 to four and two men each, at 35s. per ton, and one pitch at the 30 to two men, at 35s. per ton, the tributers to pay all cost of making their ore marketable, as hitherto. We have one pitch at the 20 working by three men, at 35s. per ton, whose take will be out at our next survey.

GREAT WEST VAN.—W. Bramwell, May 31: I herewith forward you setting report. The cross-cut going south of Eliza's shaft, at the 46, to six men, at 8*l.* 15s. per fathom, to wheel, pile, and land their own stuff to surface; this cross-cut has been extended towards the main lode 6 fms. 1 ft. I consider this a very important point when cut into; looking at the highly favourable appearance the lode has in the upper 22 cross cut, which leaves very near 30 fms. of backs between the cross-cut, I feel confident of considerable success attending the operation. Ditto the cross cut going north, to cut new lode at the 46, to four men, at 8*l.* per fathom: I have set this in one contract to cut the lode, and to wheel and land their own stuff. The 46 west, to six men, at 8*l.* 15s. per fathom, and to train their own stuff; the lode is from 5 to 6 ft. wide, and the indications are looking very favourable for an early improvement. A winze in bottom of the 34, to four men, at 7*l.* 15s. per fathom, under the old ladder-road, where I expect this will open out some good stoping ground, and at the same time ventilate the 46 west. We have two men busy clearing the 34 west, which will be completed in a day or two; then I shall put them about stripping down the lode to full extent, so as to prove the south wall of the lode. There might be a good course of ore standing on the south wall, for the lode is about 17 ft. wide at this section of the mine. The stopes in the back of the 46 have not been set, as the men are busy cutting pitches for stull pieces, &c. We have commenced driving a level close to the brook, at the eastern part of the sett, which is in the soil yet. I hope we shall meet with the rock soon, for it appears there are two lodes forming a junction in this part of the sett.

GREEN HURTH.—W. Vipond, May 24: No. 1 Cross-cut South: In the end the vein continues about as last reported; we are expecting to have the intersection daily. In No. 1 west side the branch is improving daily, and is now worth 3 tons of ore per fathom. In No. 2, on the west side, the branch is yielding 16 cwts. of ore per fathom. The stope above adit is not so good as when we began with it; worth at present 2 tons of ore per fathom. No change to report in No. 2 or No. 4 cross-veins. Outside work is going on well, and the machinery will soon be ready to start.

— W. Vipond, May 30: Monthly Bargains: At our bargains yesterday the end south, on No. 1 cross vein, was set to two men to drive to the expected intersection for a month, at 103s. per fathom. The stope above the adit, on No. 1 vein, is set to two men, at 48s. per fathom of 144 square feet. The new branch on No. 1 (west side) is set to two men, at 58s. per fathom. The end on No. 2 cross vein south is not taken, as these men are working at the reservoir this week; the price paid is 83s. per fathom. The stope behind this, on No. 2 (bottom of level), is set to two men, at 45s. per fathom.

HALKYN DEEP LEVEL.—May 30: The pitch 22 yards below the 174 yard level, to the east of the junction, on Pant-y-Go vein, is set to four men, at 9*l.* per ton tribute; this pitch is now worked in about 21 yards east of the junction, and the run of ore we are working upon is dipping eastward with the limestone measures, and, no doubt, will be found more productive as this section of the mine is opened out eastwards towards the junction of the limestone with the coal measures. The pitch 22 yards below the 174 yard level, to the west of the junction, on Pant-y-Go vein, is set to two men, at 9*l.* per ton; the lode at this point is about 18 in. wide, worth 10 cwts. of lead ore per fathom; there is a large piece of ground between this pitch and the deep level to be taken away on tribute. We have two men re-opening the 174 yard level, north-east of the junction, on the deep level vein, to keep the communication clear to Lewis's shaft, and also looking after and doing any repairs wanted at the deep level. We are busy in getting up the tributers' work for last month, and washing up the same, so as to set them on again underground as soon as possible.

HARWOOD.—W. Tallentire, May 26: Herdship Level: There is no change yet in this level east, good progress in driving is being obtained. The end north on the vein is a shade harder to drive, and not quite so good for lead this last day or two. There is not much improvement in the vein south; we still find samples of ore as we drive on.

LADYWELL.—A. Waters, June 1: The tributers are working regularly, and getting good wages at the prices per ton as in the setting list. We have to-day sampled 50 tons of lead ore for sale on Thursday next.

LOVELL.—J. Prisk, E. Kempthorne, May 31: The following is a report of our monthly setting, which took place on Saturday last. The 20 to drive west of the cross-cut on the south lode by two men and two boys, at 6*l.* per fathom; lode 4 ft. wide, producing low-quality tinstone, but improving as we advance. The 30 to drive east of south lode, by nine men, at 12*l.* per fathom; lode 8 ft. wide, and worth 15*l.* per fathom. The stope in the bottom of the 30, east of winze, on south lode, by six men, at 5s. per ton; lode 10 ft. wide, worth 20*l.* per fathom. A stope in the back of the 30, east of south lode, by four men, at 14*l.* per fathom; lode rise in the back of the 30, east of south lode, by four men, at 14*l.* per fathom; lode 4 ft. wide, worth 12*l.* per fathom. A stope in the back of the 40, west of rise, by four men, at 5s. 6d. per ton; lode 8 ft. wide, worth 25*l.* per fathom. A stope in the bottom of the 30, west of winze, on south lode, by six men, at 5s. 6d. per ton; lode 8 ft. wide, worth 20*l.* per fathom. A cross cut to drive south in the 40, east of shaft, for the purpose of intersecting the south lode at this level: the ground here is rather hard, set to six men, at 12*l.* per fathom. All the spalding to strong men, at 9*l.* per month. All the landing and filling to two men and two boys, at 9*l.* 10s. per month. At the stamps the engine and boiler are fixed in their places, and the engineer is now fixing and connecting the steam-pipes to the same; in a week or 10 days we hope to set the engine to work, which will enable us to make regular returns through the summer months. Since our last report the mine generally has improved, the quality of the tinstone being better. The stamps have been idle during the past summer. The connection of the engine to the stamps will prevent this in future.

MEDLYN MOOR.—Joseph Prisk, Charles Rowe, May 31: The mine throughout continues to look much the same as last reported, with the exception of the lode in the back of the 17, on No. 1 south lode, which has improved, and is worth 8*l.* per fathom, working by four men, at 2*l.* per fathom. This seems to be one of the principal lodes of the district, and one which is likely to yield large quantities of ore when fairly opened up. In order to prepare for its full and speedy development we have commenced to sink a small shaft from surface, which will be carried through to stopes mentioned above and to the 17; this will facilitate our stoping, and act as our air shaft for this part of the mine, which will be much needed during the summer months. The ground in the sump shaft is a little easier, consequently better progress will be made. At the stamps we have nearly completed a set of frames to work the slimes; these will be in full work next week.

MONYDD GORDDU.—R. Rowse, May 31: The engine-shaft and the bargains at the 12 are and have been under water for the last three weeks in consequence of the dry weather. In order to keep the men together to go ahead again when a change came they have been breaking ore at and about the drift and adit, where there is a large accumulation of good stuff, so much so that two of the pitches will stop themselves soon if no change to enable us to brush and draw. The drift and stopes continue to yield about the same as for some time past, and with a full supply of water we should soon have another sampling.

NEW CHIVERTON.—James Trewartha, June 1: Setting Report: The 50 fm. level to drive north, by six men, the month, at 8*l.* per fathom; the lode is worth 8*l.* per fathom. The 50 fm. level to drive south, by six men, the month, at 8*l.* 10s. per fathom; the lode is worth 8*l.* per fathom. The engine-shaft is 9 ft. below the 50 fm. level; lode worth 6*l.* per fathom; contract not out. There has not been much done in sinking this week, as the shaftmen have been engaged cutting cistern plat and bearer holes preparatory to fixing a lift at the 50, and the shaft must remain at its present depth until this work is finished. The 35 to drive north by two men, the month, at 8*l.* per fathom; lode kindly, but of no value. The 35 to drive south, by six men, the month, at 8*l.* per fathom; the lode is worth 5*l.* per fathom. The adit to drive north, by two men, the month, at 2*l.* 15s. per fathom; lode large and porous, composed principally of gossan. There are four tribute pitches in the back of the 25, and two in the back of the 25, by 12 men, at 10*l.* per ton for No. 1 quality leadfore, and 5*l.* per ton for No. 2 ditto.

NEW CONSOLS WORKS.—R. Pryor and Son, Thos. Jenkin, H. Vial, May 30: The whole four stopes and tutwork bargains are looking quite as well as when

they were last reported. In the 40, driving east of Thomas's shaft, the lode is improving in value as we advance towards the winze, which has been sunk 7 fms. below the level above, and is about 10 fms. ahead of this end. Good progress is being made with the forking of the water in the western part of the mine, where the pitwork is now working smoothly, and doing good duty. The Oxland calciner has commenced to perform good work, although we have not yet put it on full duty. We are pushing on with No. 2 calciner with the utmost dispatch, and shall be lining the tube to-morrow. The whole of our machinery is working well, and we shall ship another good parcel of precipitate by the Aristide in a day or two.

NEW NORTH POOL.—W. C. Vivian, June 1: In accordance with your instructions, I went underground yesterday and made arrangements for commencing the driving of the 25, with the object of intersecting the large quartz lode dipping north, through the engine shaft at the adit level. It will take a day or two to get timber sawn for placing "gates" in the whim-shaft at the 25, to throw the kibble into the plat; and in the meantime I have instructed the men to continue the driving of the 40 east. There is a little improvement in the 40 end; and I was able to break some specimens from the part of the lode adjacent to the north wall, containing rich spots of copper ore. The bearing of the lode is also more in accordance with that of the great copper lodes of the district than it has been in any part we have before driven through, being about 10° north of east.

NEW ROSEWARNE.—E. Hosking, W. Bennetts, June 1: The lode in the 67, west of Pool's shaft, is 1½ ft. wide, worth 7l. per fathom. There is no change to notice in either the 58 or 46. The tribute pitch in bottom of the 58 is producing some very good quality copper ore. We will send on a setting report on Saturday.

NORTH LAXEY.—R. Rowe, May 31: The lode in the 136 end, north and south, just recently started, is 3 ft. wide, yielding some saving work for lead, and looking best along the bottom. There is a better looking lode in the 84 end driving north than we have seen for some time, now about 1 ft. wide. The stopes are about the same value as last reported.

— June 1 (Telegram): "The lode in the 136 end is 3 ft. wide, lode going down in shale—looking remarkably well. Improvement in south end for lead. Slight improvement in stopes and 84 end."

NORTH TRESKERBY.—R. Pryor, May 31: On Saturday last we set the following:—The shallow adit level, to drive east of Doctor's engine-shaft, by four men, at 8l. per fathom; lode worth 7l. per fathom. To stope the bottom of the 39, east of Highburrow, by five men, at 4l. per fathom; lode worth 30l. per fm. The stopes in the bottom of this level west of shaft, by five men, at 4l. per fathom; lode worth 17l. per fathom. On Saturday last we sold 3 tons 7 cwts. 0 qrs. 5 lbs. of black tin, which realised 118l. 17s.

OLD TREBURGETT.—W. Hancock, W. T. Bryant, May 31: We shall set the engine shaft to sink below the 90 to-morrow. The ends, winzes, and stopes are much the same as to value as when reported on last week. We sampled to-day a parcel computed 33 tons of No. 1 quality ore for sale on June 8.

PARYS MOUNTAIN.—T. Mitchell, May 29: The 99 cross cut south, by six men, the month, at 11l. per fathom; the ground in this end has undergone quite a change; we have just passed through a vein 1 ft. wide, consisting of sulphur, flookan, and stones of copper ore. There is at present a strong feed of water issuing from the forebreast, and every joint is highly charged with sulphur, which is a favourable indication. The 90, east of engine shaft, by four men, at 8l. 10s. per fathom; this end is producing good patches of copper ore, and is being driven towards the run of ore ground seen at the 80. We have put on two more men to hasten this drive. The stopes at the intermediate level, by five men, at 6l. 10s. per fathom; lode worth 3 tons copper and 2 tons of sulphur per fathom. Ditto in bottom of this level, by six men, at 6l. per fathom; yielding 4 tons copper ore and 2 tons sulphur per fathom. Ditto at the 80, west of cross cut, by eight men, at 6l. per fathom; yielding 4 tons copper ore and 2 tons sulphur per fathom. Ditto at the 65, east of rise, by six men, at 6l. per fathom; yielding 4 tons copper ore and 1 ton of sulphur per fathom. The rise in back of the 65, by six men, at 8l. per fathom; lode worth 4 tons copper ore and 1 ton sulphur per fathom. The stopes at the 45, east of winze, by six men, at 6l. per fathom; lode wide, yielding 4 tons copper ore and 2 tons sulphur per fathom; we are also selecting some low quality copper ore and sulphur from these stopes. The rise and stopes in back of the 45, by six men, at 8l. per fathom; yielding 4 tons copper ore and 2 tons sulphur per fathom. The 45 east, by four men, at 11l. per fathom; lode all the width of the end, and will yield 5 tons copper ore and 2 tons sulphur per fathom. This place is opening up good ground for stoping. A trial cross-cut north at the 30, by two men, at 4l. 10s.; this end will prove some branches in 2 or 3 fms. driving. A similar trial at the 45 has opened up tribute ground. The 30 cross-cut south, by four men, at 4l. 10s.; we expect to cut the lode here this month. We have let 12 pitches at the usual prices.

PARYS MOUNTAIN.—F. Mitchell, June 1: We have another branch of sulphur about 6 in. wide in the 99 cross cut south to-day; the water is still issuing strongly from the forebreast. The 45 east has further improved this week. No change in any other point worthy of notice.

PAPELEY BRIDGE.—C. Williams, June 1: The Lumb vein in the south cross-cut, in the 10, maintains its productiveness, being from 4 to 5 ft. in width, composed of gossan, carbonate of lead, and blue ore, together worth 13l. per fathom. The vein seems to widen out very considerably in the sole part of the drivage, and, from all appearances, opening out into a rich course of ore between this and our 20. Fielding's vein, going north-west in the east cross-cut, in the 20, has improved very considerably within the last day or two, being at present the full width of our drivage (4 ft.), consisting of beautiful quartz, gossan, barytes, and rich lead ore, yielding of the latter 1½ ton per fathom. The rich course of ore that went down in the winze under the horse level is about 5 fms. in advance of our present forebreast. We are, therefore, certain of a good and rich vein up to that point. The same vein in the south-east end is 1 ft. wide, and producing 1 ton of lead ore per fathom. In the west cross cut, in the 20, the ground continues easy to work, and the end is letting out water freely, and the indications are highly favourable for a course of ore. The engine-shaft is down 8 fms. 5 ft. under the 20, and the men are working extremely well, and likely to make fair wages out of their contract. The Pringap vein is 6 ft. in width, consisting of quartz, blende, and a strong mixture of lead ore, ground favourable.—Gillfield: We have commenced driving east from the shaft, in a vein from 5 to 6 ft. in width, and producing 1 ton of lead ore per fathom. The stope in the back of this level will produce 1½ ton of ore per fathom.

PEDN-AN DREA UNITED.—Wm. Tregay, W. Prideaux, J. Pope, May 27 Sump: The lode in the 160 west end the ground is rather hard, lode producing about 10l. worth of tin per fm. In the 140 west end the lode (Martin's) is worth 10l. per fathom.—Cobbler's: The lode here is worth 10l. per fathom. In the 130 west end the lode (Martin's) is worth 12l. per fathom—Cardozo's: In the 100 fm. level west end the lode (north) is worth 8l. per fathom. In the 100 fathom level west rise the lode (north) is worth 8l. per fathom. In the 90 west end the lode (north) is worth 20l. per fathom. In the 80 west end the lode (north) is worth 18l. per fathom. In the 60 west end the lode (north) is worth 9l. per fm. In the 55 west end the lode (north) is worth 12l. per fathom. In the 47 west end the lode (north) is worth 8l. per fathom. There are no other changes to report.

PENNANT BARYTES.—J. Kemp, June 1: From our workings on the new carbonate vein we are sending to surface some rich stuff—carbonate and lead ore mixed, both of these of excellent quality. Our underground bargains at the engine-shaft are not yet completed, but I expect in the course of next week to inform you of such progress in this quarter as will give you every satisfaction. We have piles of stuff ready for the crusher, the erection of which and the other dressing machinery is being urged forward as rapidly as possible. The general prospects of the mine are very encouraging.

PENNERLEY.—W. T. Harris, J. Delbridge, May 31: Setting Report: Engine-shaft: The 130 to drive east by four men, at 14l. per fathom; the lode is producing good stones of lead ore. The 120 to drive east by four men, at 12l. per fm.; the lode is yielding no lead to value, but very promising. The winze to sink below this level by four men, at 14l. per fm.; the lode is worth 5 tons of lead ore per fathom. The rise and stope in back of this level by four men, at 8l. per fathom. This level to drive west by four men, at 12l. per fm.; lode yielding saving work for lead. The stope in the back of this level by four men, at 7l. per fm.; lode worth 2 tons of lead per fathom. The 100 to drive east by four men, at 12l. per fm.; lode worth 1 ton of lead ore per fathom, and promising for an improvement. The 80 to drive west, on Warm Water lode, by six men, at 13l. per fm.; lode 1 ft. wide, and worth 15 cwts. of lead ore per fathom. The winze to sink below the 70 by four men, at 10l. per fm.; lode worth ½ ton of lead per fathom. No. 1 stope below this level by four men, at 7l. per fm.; lode worth 2 tons of lead per fathom. No. 2 stope by four men, at 7l. per fm.; lode worth 2 tons of lead per fathom. In this section of the mine we have seven tribute pitches by 16 men, at from 7l. to 9l. per ton for lead.—Potter's Pit: The cross cut to drive north at the 90 by eight men, at 14l. per fm.; according to the distance driven we are on the point of intersecting the north lode. The winze to sink below the 75, east of cross-cut, is down 12½ fms.; set to nine men, at 15l. per fathom. We hope to communicate this winze with the 90 cross cut by the end of this month. The winze and stope west of cross cut by 12 men; lode worth 45l. per fathom. The 65 to drive west by two men, at 4l. per fm.; lode worth 15l. per fathom. The 35 to drive east on the gossan lode by four men, at 4l. per fm.; yielding good stones. We have about 5 fms. to drive to be in a productive lode. The 25 to drive east on same lode by four men, at 4l. per fm.; lode yielding good stones of ore, and very promising for an improvement; these two drivings are for developing the course of ore recently discovered. We have here five tribute pitches, No. 1, where there is a rich course of lead, is set at 1l. 5s. per ton, the other four at 7l. per ton respectively.

PENSTRUTHAL.—William Teague, May 29: In Highburrow shaft, sinking under the 58, the lode is changed in appearance, and produces rich stones of copper, showing indications of a copper producing lode. I have sent you by this train specimens of same. In the 58, driving east of Highburrow shaft, the lode is becoming more mineralised for copper, and improving in size—a very fine looking lode—with rich spots of ore disseminated throughout, very promising for an early improvement; ground easy, set at 2l. per fathom. In the 58, driving west of shaft, the lode is much improved since last reported on, and worth for copper ore 10l. per fathom: you will receive by this day's train specimens of rich grey copper ore from this level—a most promising lode; this is quite new, not having produced any copper ore to the west of this shaft until now. In the 44, driving west of shaft, the lode is much the same as last reported. In the 46, driving east of Highburrow shaft, the lode is producing a little copper; of this I hope to speak more fully in my next. In the 44, driving east of shaft, on the tin lode, the lode is worth for tin 8l. per fathom. In the 34, driving west of shaft, the lode is producing saving work for tin. In the winze sinking under the 34, east of shaft, the lode is worth for tin 8l. per fathom. In the 22, driving east of Highburrow shaft, the lode is worth for tin 5l. per fathom. In the 22, driving east of Highburrow shaft, the lode is yielding saving work for tin. We have resumed the driving of the 10 west from middle shaft; the lode is worth for tin 5l. per fathom. We sampled a parcel of copper ore of about 12 tons, which will be sold on Thursday next, of average quality; I will write you the result of the sale. You will perceive the bottom of the mine is changing into copper, which in my opinion augurs well; you will be able to form an opinion from the specimens sent you. All other parts are without alteration.

PRINCE OF WALES.—J. Andrews, J. Pryor, May 31: The ground in the 77 cross-cut north is a little stiffer for driving. In the 55 west we have driven about 8 ft. beyond the cross course, but finding no lode we have put the men to drive north, thinking it is heaved by the cross course in that direction. In the 45 west we are carrying 4 ft. of the south part of the lode, which yields good stones of ore, and is looking very promising.

RELISTIAN CONSOLS.—John Curtis, May 31: The branch of pale yellow copper ore in Drake's scaft is not so large nor so good as for some time past. I think the ground is a little more favourable for sinking.

RHEIDOL.—John Ridge, May 27: The lode in the back of deep adit is opening out wider and getting stronger as we rise, and will now yield 2 tons 5 cwts. of good strong blende per fathom, and good branches of lead ore. We have cleared the whole of the stuff from Altidu since the beginning of the week.

ST. PATRICK.—Wm. Francis, May 31: The 120 yard cross-cut I am glad to report still continues to present the same favourable appearance; the cross-course is well defined, easy for driving, and containing clay, spar, gossan, and lead ore in small strings interlaced throughout; set at 4l. per fathom for driving. The 90 yard north cross-cut is without alteration to note, still in the cross-course, and set at 6l. per fathom. The 60 yard cross-cut in the chert measures progresses very satisfactorily, in fine bearing ground, and I have every reason to think the first east and west vein cut here will prove rich.

SOUTH DARREN.—John Boundy, W. H. Boundy, May 29: Setting Report: The engine-shaft to sink below the 90, by nine men, at 22l. per fathom. The 90 to drive west, by six men, at 12l. per fathom; the lode is 2½ ft. wide, worth 20l. per fathom, and looking promising for a good improvement. To stope the back over the 90, west from shaft, by four men, at 85s. per fathom; the lode is 2½ ft. wide, worth 15l. per fathom. To stope the back over the 90 west, by four men, at 85s. per fathom; the lode is 2 ft. wide, worth 14l. per fathom. To stope the back over the 90, west from ditto, by six men, at 85s. per fathom; the lode is 2½ ft. wide, worth 15l. per fathom. Fair progress is being made in sinking the winze below the 90, under contract. The 80 to drive west, by six men, at 12l. per fathom; the lode is 4 ft. wide, worth for lead and copper 20l. per fathom; and, judging from the present appearance of the lode, we are convinced that we shall open out a good piece of ore ground here. To stope the back over the 80 west, by four men, at 80s. per fathom; the lode is 2 ft. wide, worth 10l. per fathom. To stope the back over the 80, west from ditto, by four men, at 80s. per fathom; the lode is 2 ft. wide, worth 10l. per fathom. The ground in the winze sinking under the 80 is hard and tight, which makes progress rather slow. The 70 to drive west by four men, at 10l. 5s. per fathom; the lode is 2½ ft. wide, now yielding lead and copper worth 10l. per fathom, and promising for further improvement. To sink a winze below the 70, by four men, at 13l. per fathom; the three winzes are going down on the south wall of the lode. To stope the back over the 70, by four men, at 80s. per fathom; the lode is 2½ ft. wide, worth 13l. per fathom. Owing to the very dry weather, our surface water is getting short. I hope we shall have some rain soon.

SOUTH DARREN.—J. Boundy, June 1: The depth of the shaft below the 90 is now 6 ft. The depth of the winze below the 90 is 3 fms. 3 ft. The depth of the winze below the 80 is 3 fms. 2 ft. The winze in the 70 is just now started below the level.

SOUTH TOLCARN.—J. Vivian and Son, J. Paull, June 1: We beg to report as follows:—The shaftmen have cut into the engine lode at the 50 3 ft. without meeting with the north wall, and have driven 3 ft. east of the shaft; the ground is easy for driving through, and the lode so far as seen presents a fine appearance, being composed of peach, flookan, and quartz carrying a little tin. We must drive 9 ft. east, and cut a small plot before commencing to cross cut north towards Fraser's lode.—Fraser's Lode: In the 40, east of engine-shaft cross cut, the lode is 4½ ft. wide, and worth about 8l. per fathom; price for driving 3l. per fathom, and 1s. in 20s. tribute. In the same level west the lode is 3½ ft. wide, and worth 3l. per fathom; price for driving 3l. per fathom, and 1s. in 20s. tribute. In the stope in the back of the 40, east of Heathorne's winze, the lode is 2 ft. and worth 4l. per fathom: price for stoping 1l. 10s. per fathom, and 1s. in 20s. tribute.

TALYBONT.—Thos. Nanville, June 1: During the past month we have been clearing the debris from the old workings on the grey ore lode, and find the lode has been taken away by the old workers for 8 fms. in length and 8 fms. in depth below the surface; so far as we can see of this lode it is showing good lead ore throughout, which will be taken away in paying quantities. The men are now cutting out the lode at different points, which will shortly enable us to see more fully the value of this discovery. By the direction of this lode it forms a junction with the old lode at a point 50 fms. east of the present workings, and is standing in whole ground to the western boundary of the property. I shall at once drive Wilkinson's cross cut that will intersect it at a deeper point than can now be seen. I look upon this as an excellent discovery, and which will greatly enhance the value of the mine.—New Lodes: The stope to the west of rise is yielding about 1½ ton of ore per fathom. In the 12, west of new shaft, the lode is composed of go-san, intermixed with lead ore of a promising character. Our other operations are looking much as usual. In conclusion, I am pleased to say our mine continues to open in a very satisfactory manner.

TANKERVILLE.—Arthur Waters, June 1: The shaft below the 167 is down 2 fms., and will be deep enough for the next level (the 180) in five months from now. The 167 west, now 16 fms. from shaft, is into a splendid cavity, with a course of lead on each side worth 12 tons per fathom, and still getting richer and wider as we advance. Other points and stopes are yielding as for some time past.

TEESDALE.—Thos. Watson, May 25: North End Workings: I have no change to notice with these workings; the vein keeps its value steadily—about 3 bings per fathom.—South Level: The men are at present engaged clearing out the bottom drift, in order to make a communication with the air shaft. They have 2 fms. of whole ground underneath drift, which we will commence to stope out as soon as we get a road through to the shaft foot; there is good ore in this ground.—Hopkins Level: The men have made little progress with the rise this week. The feeder of water is still running very strong, and the ground is much broken. I expect 3 or 4 ft. will reach the first limestone above level; they have not yet cut into the vein in the hazle.—Surface Work: We shall finish the cutting out and tunnelling of the tail race from water-wheel this week. Some hands have commenced to cut out for wheel-pit. Lead ore dressing is in full work.

TEMPLE.—June 1: The lode in the deep adit is still improving in appearance, the leader of spar, blende, copper, and lead ore being now 3 ft. 6 in. wide, the latter ore increasing in quantity as we get deeper into the mountain.

TRELEIGH WOOD.—E. Hoskinz, W. Goldsworthy, May 31: There is no change to notice in any of the bargains since our last. Friday next being setting day, we will send you a full report.

VAN CONSOLS.—J. Roach, May 29: The parcel of lead has been shipped to the purchasers, and the order for carbonate of barytes raised and sent to surface, which we are now carting to the station. Dressing is going forward towards another parcel of lead. The 40, west from Murry's drivage, resumed to-day. Good progress is being made in Murry's shaft. The stope above the 35 is improving.

VAUGHAN.—May 30: The engine-shaft sinking under the 32 is in ground composed of a light clay-slate, branches of carbonate of lime, with occasional small strings of lead and blende. In the deep adit level east the part of the lode being extended is chiefly composed of a light clay-slate, carbonate of lime, containing occasionally spots of copper and lead; this point is being pushed forward as fast as possible to reach under the engine-shaft. The pumping-wheel and pitwork are in good repair, and working well.

VRON.—H. Harper, May 27: We have finished clearing and repairing the 60 from the shaft to a few yards beyond the No. 2 winze west, so as to enable us to have access to the western ground and enable tributers and others to search for lead ores. For the last two days I have, with the assistance of one man, been exploring the old workings in the roof of the 60, and in several places we find ground has been opened from which large quantities of lead have been taken away by the ancients. I have selected a place about 20 or 30 yards west of the winze for a trial, and about 10 yards from the roof of this level to open an intermediate level for a few yards; the lode is about 2 ft. wide, with a rib of 2 in. of lead. The ground is spare for opening. I intend to put on only two men and one boy. I purpose to resume the sinking of the winze in the bottom of the 40, on the north and south lode, by two men, and to resume the driving of the south lode, by two men; by so doing we shall have three points at issue, which, under existing circumstances, is the best mode of working I can recommend. I hope next week to set some tribute ground in the roof of the 60.

WEST CHIVERTON.—R. Southey, May 31: It is with much pleasure I have to inform you of a very good improvement in our bottom end at the 150, west of Batters' shaft: lode worth fully 2l. per fathom. This looks well for our next level (160). The discovery took place this morning, and I hasten to send you a few lines by to-day's post. A full report will follow to-morrow.

— R. Southey, W. Roberts, J. Moyle, June 1: Hawke's Engine-shaft: The 140 to drive west of this shaft, on south lode, by six men, the month, at 12l. per fm.; lode worth for lead and blende 8l. per fathom. The 140 to drive east of this shaft, on south part of south lode, by four men, the month, at 8l. 10s. per fathom; lode worth 12l. per fathom. A winze to sink below the 130, on south part of south lode, by six men, to communicate with the 140, at 8l. per fathom; lode worth 10l. per fathom. The 80 to drive west of shaft, on north lode, by four men, the month, at 7l. per fathom: lode worth 6l. per fathom.—Batters' Engine shaft: This shaft to sink below the 150, by six men and three boys, 8 fms. certain, at 40l. per fm. We are now down 6½ fms. below the 150, and good progress is being made in sinking. The 150 to drive west of shaft, on south lode, by six men, the month, at 8l. 10s. per fathom. We are glad to state that a decided improvement has taken place in this end, and the lode is now worth 20l. per fathom. The 150 to drive east of Cowering's winze, by six men, the month, at 7l. 10s. per fathom; lode worth 12l. per fathom. The 150 to drive west of Batters' shaft, on north lode, by four men, the month, at 7l. per fathom; lode 2½ ft. wide, worth 20l. per fathom. The 150 to drive east of Batters' shaft, on south lode, by four men, the month, at 8l. 10s. per fathom: lode 4 ft. wide, producing occasional stones of lead. The 140 to drive east of Batters' shaft, on south lode, by four men, the month, at 5l. 10s. per fm.; lode worth 5l. per fathom. The 140 to drive west of Batters' shaft, on north lode, by four men, the month, at 8l. per fathom; lode worth 5l. per fathom. A winze to sink below the 130, on north lode, to communicate with the 140, by six men, at 7l. 10s. per fathom; lode worth 6l. per fathom. The 130 cross-cut to drive south of Glubb's shaft, by two men, the month, at 6l. per fathom. Nothing of importance has yet been intersected. We sampled last week 110 tons of lead, and yesterday 210 tons of blende, and are now busily engaged preparing samplings for the ensuing month. The masons and carpenters are making good progress in building the new crusher-house, and the castings are also in a forward state. In conclusion, we beg to say we are very well pleased with the improvement in the bottom level, and the mine throughout is looking better than when last reported.

WEST CRAVEN MOOR.—David Williams: The engine-house has been completed, and covered with corrugated iron, also head-gear and pulley stands for both shafts, and the new patent winding engine supplied by Robey and Co., of Lincoln, is working very satisfactorily. The house teams for washing and grating the leadstuff has been completed, and we shall have the tramroad laid from new east shaft to the same next week. In the cross cut south to the parallel lodes in Blackhill level, we have cut a flier off the lode, with a small rib of solid ore. The ground is more compact. All other points are much the same as last advised.

WEST GODOLPHIN.—John Pope, June 1: We holed Boulton's shaft to the 10 yesterday forenoon, but it will take two days to get it squared down. The water is in fork, and everything going on well. The different ends and stopes in the mine are without change since last report.

WEST GREAT WORK.—S. J. Reed, June 1: In the 10, driving east of cross-cut from Duke's shaft, the Godolphin or new lode is now 2 ft. wide, and worth 8l. per fathom; it has but little underlie, and the appearances are favourable for making large quantities of mineral in depth. In the western drivage at this level the ground has not been so favourable for driving, while the lode is of a good size, and contains splendid stones of tin. We are likely soon to intersect a cross-course in this level, which will in all probability have a beneficial effect on this, as was the case on No. 2 lode. I now purpose putting out a cross cut at the next level to intersect the Godolphin lode under where we have found it productive in the 10; and if found valuable there will place the mine in a most satisfactory position with regard to increased returns of tin. A rise will be commenced in the back over the cross-course forthwith, so as to lay open and ventilate this part of the mine.

WEST MARIA AND FORTESCUE CONSOLS.—Wm. Skewis, May 31: West Maria Lode: Willesford's Shaft: There is no change to notice in any of the points of operation at this shaft since last week.—North Lode: The lode in the 71 west is looking much the same as when last reported on—worth 10l. per fathom. We have commenced driving the 60 east: the lode is about 2½ ft. wide, containing a little copper ore and mundic, and looking kindly for an improvement. There is no change to notice in either the western end or rise at this level.

WEST TANKERVILLE.—Arthur Waters, June 1: This mine is opening out in a very promising way indeed, and we expect to see a considerable improvement in the 75, south of boundary shaft in a fathom or two further driving. The stopes are yielding as for some time past. We have lately sampled 25 tons of ore for sale next week.

WEST WHEAL TOLGUS.—May 31: There is not much alteration to notice since last week, the bargains were all taken at the prices offered in the survey. The water is in fork, and the men are fully at work. On Friday we set Richards' shaft to sink to the 95 at 30l. per fathom, so we hope to make good progress in getting this shaft down; the lode at this shaft is large: in the 85 it is 8 ft. wide, a fine looking lode with stones of ore.—Setting List: Taylor's shaft to sink below the 135, in killas. In the 135 west the lode is 4 ft. wide, yielding 4 tons of ore per fathom. In the 125 west the lode is small and poor. In No. 1 winze under the 125 west the lode is yielding 7 tons of ore per fathom. In No. 2 winze under the 125 west the lode is 8 ft. wide, yielding 15 tons of ore per fathom. In the 115 the lode is 3 ft. wide—unproductive. In the 105 west the lode is 4 ft. wide, chiefly spar. In the 95 west the lode is 2 ft. wide, yielding 2½ tons of ore per fathom. In the driving east in the back of the 125 west the lode is yielding 3 tons of ore, worth 19l. per fathom. In the stope in the back of the 125 west the lode is yielding 5 tons of ore; worth 33l. per fathom. In the stope in back of the 115 west the lode is yielding 4 tons of ore; worth 22l. per fathom. In the stope in back of the 115 west the lode is yielding 4 tons of ore: worth 22l. per fathom. In the stope in back of the 95 west the lode is yielding 6 tons of ore; worth 38l. per fathom. Suspended the stopes in back of the 125 west, also the stope in back of the 95 west. We have holed the 85 west to Richards's shaft.—Richards' Engine-Shaft: Richards' shaft to sink below the 85; shaft set to sink in killas. In the 75 west the lode is poor and disordered. In the 65 west the lode is small and poor. In the 55 west the lode is small and poor. We have finished cutting plat at the 85.

WHEAL CREBOR.—J. Andrews, May 30: There is no change in the 120 cross-cut south. In the 108 east we are driving by the side of the lode. In the 72 east we have cut into the lode nearly 7 ft., and no signs of a north wall yet; so far as cut into it is composed of quartz, capel, mundic, and white iron; and to-day we have taken from the extreme point cut into rich stones of yellow copper ore. In the 48 east the part of the lode we are carrying is worth 10l. per fathom, with a very promising appearance. The lode in No. 1 stope, in back of the 48, has very much improved, and is now worth 30l. per fathom. The lode in No. 2 stope, in back of the same level, continues of the same value—30l. per fathom. On the whole, the mine is looking well.

WHEAL GRENVILLE.—T. Hodge, May 31: Western Shaft: The 160 east end is worth 7l. 10s. per fathom. The 160 west end is worth 6l. per fathom. The 150 east end is worth 10l. per fathom. The 130 east end is worth 10l. per fathom.—North Shaft: The 130 east end is worth 9l. 10s. per fathom. In the 130 east end, on the old lode, the vein is 3 ft. wide, producing stamping work. In the 140 north cross-cut I think we have touched the south wall or capel part of the great lode. I shall be able to see more of its character in a day or two, when I will write you again. The stopes, on the whole, are without any change since my last. We changed the working barrel of our bottom drawing lift at the western shaft on Monday night, and forked the water to bottom yesterday morning, but by the means of the bucket-rod breaking last night the water is now about 5 ft. above the bottom of the 160; this is repaired, and the engine working well.

WHEAL KITTY (St. Agnes).—Stephen Davey, Richard Harris, May 27: There is no change worthy of especial remark in either of the points of operation; they maintain their size and value as reported in our last. We are pleased to say we have made good progress with the forking of the water, and hope to have the mine thoroughly drained in the course of another week.

WHEAL RUSSELL.—J. Bray, June 1: The lode in the 25 is looking more promising. No alterations to notice in the stopes. We sampled on Friday last 106 tons of ore, about paying cost.

WILLOUGHBY.—H. Nottingham, May 30: New Lode: Pyne's shaft, sinking below the 23, is down 8 fms. 3 ft. below level; the lode is strong, being chiefly composed of limespar, with a good mixture of lead and blende on the hanging wall side. I calculate another month's sinking to put us deep enough for a 33 fm. level, when we shall at once commence driving south to get under the course of ore going down in bottom of the 23. The 23 end, driving south, is still in ore ground, but not rich, yielding sufficient to pay for driving. The stope over this level, south of rise, is worth 15 cwts. of lead and the same of blende per fathom; this stope will improve as it comes nearer the level. I may here remark that the 23 has now been driven nearly 40 fms., the lode producing lead and blende the whole way, and in the richest place as much as 3 tons per fathom.—Goddard's Lode: The 23, driving south, is now going south of No. 3 shaft, which is 44 fms. from Pyne's engine-shaft, in a lode pr ducing 15 cwts. of lead and 1 ton of blende per fathom; this level has passed through one of the best runs of ore in the mine between Nos. 2 and 3 shafts, in addition to the first run, we had north of No. 1 shaft. There is yet another run in advance of this end, seen in the 13 fm. level, which is, probably, what we are now entering into. The three stopes working below the 13—two north of No. 1 shaft and one north of No. 3—are each worth 15 cwts of lead and the same of blende per fathom. When the 23 end is advanced a little from No. 3 shaft we shall start a stope over the level on the north side of the said shaft, in a good course of ore, worth in places 2 tons per fathom. The 13 end has been suspended for some time; this end is about 20 fms. south of No. 3 shaft, there being a little ore still in the end. We have one stope in back of the 13, south of No. 4 shaft, worth about 15 cwts. of lead and 1 ton of blende per fm. The 6 fm. level stope, which is above this, and some fathoms in advance of the 13 fm. level end, is, I believe, entering a fresh run of ore ground. We have all the usual indications, and the lode improving. This looks well for the levels which have yet to be driven up to this. It is my opinion this lode will be found to contain runs of ore the whole length between the new lode, which crosses it some 10 fms. north of engine shaft, and the No. 2 east and west lode, which meets it about 80 fms. south of engine shaft. Our present workings, which extend in the upper section more than 60 fms. south of engine-shaft, have thus far proved this. Surface: The pumping, drawing, and dressing machinery is all in good working order, and good progress is being made in the dressing department. The increased size of our reservoirs has enabled us to continue in full course of working, which otherwise we could not have done with the very dry season we now have.

VAN MINES—MONTHLY REPORT.

May 31.—As under I beg to hand you my monthly report and setting list. The 105 cross cut is driven 7 fms. 2 ft., of which 20 ft. is in the main lode, which so far has produced saving work for dressing. We have not reached the footwall yet. You will recollect that in a former report I pointed out that we cannot expect any great riches at this point, for the reason that the great runs of ore seen at the corresponding points at the levels above dip westward: set to four men, at 260s. per fm. The same level west in the bastard lode is set to six men, at 100s. per fathom. We are having nice spots of ore occasionally in this end. When this level is driven 14 or 15 fms. we shall cross-cut north into the main lode, where we should find the big run of ore ground gone down in the level above. The 90, west of shaft, is extended 52 fms.; worth for lead 50l. per cubic fathom. This end is set to six men, at 240s. per fathom. The stripping down of the lode to full width in the side of this level, at a point 20 fms. west of shaft, is set to eight men, at 70s per fathom, worth for lead ore 35l. per cubic fathom. The 90 is driven east of shaft 32 fms. 4 ft., and is worth for lead ore 15l. per cubic fathom. We have this month communicated with the 30 fm. level winze sunk below the 75. The level is set to six men, at 160s. per fathom. The 75, west of shaft, is worth for lead ore 50l. per cubic fm.; set to six men, at 260s. per fathom. This end is now 81 fms. west of shaft. The same level driving west by the side of the lode is set to six men, at 110s. per fm. The cross-cut into the lode from the side of this level at a point 90 fms. west of shaft, is driven 12 ft. into the lode, which is worth for lead ore 45l. per cubic fm.; set to six men, at 240s. per fathom. The stripping of the lode to full width at a point about 75 fms. west of shaft is set to eight men, at 100s. per fathom. This point is worth for lead ore 70l. per cubic fathom. The same at a point about 60 fms. west of shaft is set to eight men, at 90s. per fathom. The 40 stope in the back of the same level is set to eight men, at 65s. per fathom; the 30 ditto, set to eight men, at 75s. 6d.; the 20 ditto, set to eight men, at 85s.; the 10 ditto, set to eight men, at 65s. These stopes are on an average 16 ft. 4 in. wide, and worth for lead ore 33l. 10s. per cubic fathom. The 60 is extended 155 fms. west of shaft. I am afraid lodo much here at present, fearing that we may cut into more water, and our present pitwork is at full stretch to keep the mine in fork. We crossed north near the present end, where we found the lode unproductive. This end is, therefore, suspended. A winze to sink below this level at a point 120 fms. west of shaft for the purpose of ventilating the 75 will be set in a few days. The men are now engaged cutting and timbering the winze plat, which they have taken to complete for 6l. They will then commence sinking, when we shall set the winze. The 60 is driven 60 fms. east of shaft. At this point we have cross-cut 5 ft. into the lode, which we find well charged with lead. We have resumed the driving of the level eastward in order to communicate as soon as possible with a winze sunk below the 45 fm. level, 15 fms. ahead. The ventilation is rather short, and as soon as the communication is effected we shall come back and resume the driving of the aforesaid cross-cut to thoroughly prove the lode; set to four men, at 80s. per fathom. The winze above referred to is down 14 fms. 3 ft. They have taken 16 fms. stent, which with 9 ft. more sinking they will complete, and be deep enough for the 60. We shall then remove this pare to sink a winze below the 75 (to ventilate the 90), at a point 65 fms. west of shaft. The stopes in the back of the 60 are set as under:—The 40 east, to eight men, at 80s. per fathom; the 24 east, to six men, at 70s. per fathom; the 16 east, to eight men, at 70s. per fm.; the 8 east, to eight men, at 75s. per fathom; the 16 west, to eight men, at 70s. per fathom; the 32 west, to eight men, at 72s. 6d.; the 48 west, to eight men, at 70s. per fathom; the 56 west, to eight men, at 70s. per fathom; the 64 west, to eight men, at 70s. per fathom; the 72 west, to eight men, at 70s. per fathom; the 90 west to eight men, at 70s. per fathom; the 100 west, to eight men, at 70s. per fathom; the 115 east, to eight men, at 65s. per fathom. These stopes are worth on the average 27l. per cubic fathom for lead ore; average width 15 ft. 8 in. The 45 permanent level, west of shaft, is set to four men, at 100s. The same level east of shaft is for the present suspended, and the four men set to cross cut north at the present end to effect a communication with the main level), at 120s. per fathom.

The stopes in the back of the 45, east and west of shaft, are set as under:—The 54 east, to eight men, at 90s. per fathom; the 40 east, to six men, at 90s. per fathom; the 16 east, to four men, at 80s. per fathom; the 8 east, to twelve men, at 80s. per fathom; the 60 west, to eight men, at 85s. per fathom; the 70 west, to eight men, at 85s. per fathom; the 80 west, to four men, at 75s. per fathom; the 90 west, to eight man, at 80s. per fathom. These stopes are on the average 16 ft. 6 in., and worth 25l. per cubic fathom for lead ore.

Surface: We are making fair progress with the buildings for the 70 inch pumping engine. We find this a very heavy job, inasmuch as the quarry is a mile distant, and the hauling of stones all uphill work. We are busy making bricks for six more cottages. Our sale takes place to-morrow, upon 600 tons of lead ore and 200 tons of blende.—WM. WILLIAMS.

MINING NOTABILIA

[EXTRACTS FROM OUR MINING CORRESPONDENCE.]

SOUTH WHEAL CROFTY.—In the driving towards the 180 cross cut the great East Pool copper lode is still being vigorously continued, and, according to present prospects, it is confidently expected that there will be found something good. The shares will then at once advance to 50l. a share. They reached about two years ago 125l., and it must not surprise us if they reach that figure again before long from the excellent indications that have recently been met with. The other important improvements expected to take place are at the 205 fm. level; the lode here is very large, and produces valuable copper ore. The 150, east of cross course, and the 160 cross-cut, from Palmer's shaft, are also important parts. A considerable amount of business has been done recently, with a view to a permanent investment. The prices of shares do not fluctuate much. They are now called 18l.

One of our correspondents in Cornwall informs us that Mr. JOHN B. SARGENT, of Liskeard, a gentleman of considerable business tact and of good connections, has recently commenced the business of a stock and share dealer, and is doing a large business.

The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, JUNE 2, 1876.

	£	s. d.	£	s. d.
IRON.				
Pig, GMB, f.o.b., Clyde..	2	17 3-	—	
,, Scotch, all No. 1 ...	2	18 0-	3	8 0
Bars, Welsh, f.o.b. Wales	6	2 6-	6	5 0
,, ,, in London.	7	0 0-	—	
,, Stafford., ,, .	8	0 0-	9	15 0
,, in Tyne or Tees ...	6	10 0-	—	
,, Swedish, London ..12		0 0-12	10	0
Rails, Welsh, at works..	5	15 0-	6	0 0
Railway chairs	—	—	—	
,, spikes	—	—	—	
Sheets, Staff., in London10		10 0-	—	
Plates, Staff., in London10		0 0-12	0	0
Hoops, Staff.	8	15 0-10	0	0
Nail rods, Staff. in Lon.	7	15 0-	8	2 6
STEEL.				
English, spring 14		0 0-23	0	0
,, cast 25		0 0-45	0	0
Swedish, keg.....18		0 0-	—	
,, fag. ham. 19		0 0-	—	
LEAD.				
English, pig, common . 21		5 0-21	10	0
,, ,, L.B. 21		10 0-	—	
,, ,, W.B. 22		10 0-	—	
,, sheet and bar..22		0 0-22	10	0
,, pipe.....23		0 0-	—	
,, red 24		0 0-24	10	0
,, white 28		0 0-29	10	0
,, patent shot ...25		10 0-26	0	0
Spanish.....20		15 0-20	17	6
QUICKSILVER.				
Flasks of 75 lbs., ware.	9	15 0-10	0	0
SPELTER.				
Silesian or Rhenish ..	23	10 0-	23	15 0
English, Swansea	23	10 0-	23	15 0
Sheet zinc	28	0 0-	28	10 0

	£	s. d.	£	s. d.
TIN.				
English, ingot, f.o.b ..	80	0 0-	—	
,, bars ,, ...	81	0 0-	—	
,, refined.....	82	0 0-	—	
Australian	74	10 0-	—	
Banca	80	0 0-	(nom.)	
Straits	74	10 0-	—	
COPPER.				
Tough cake and ingot.	83	0 0-	84	0 0
Best selected	84	0 0-	85	0 0
Sheets and sheathing .	88	0 0-	89	0 0
Flat Bottoms	92	0 0-	—	
Wallaroo	83	0 0-	83	5 0
Burra, or P.C.C.	83	0 0-	—	
Other brands	81	0 0-	82	0 0
Chili bars, g.o.b.....	77	0 0-	77	10 0
PHOSPHOR BRONZE.				
Bearing metal	£112	0	0	
Other alloys	£120	0 0-	140	0 0
BRASS.				
Wire	8¼d.		—	
Tubes.....	9		-12d.	
Sheets	9		-10	
Yel. met. sheath. & sheets.	7½		- 8	
Nails composition.....	9		-10½	
TIN-PLATES.*	per box.			
Charcoal, 1st quality ...	1	5 0-	1	6 0
,, 2nd quality...	1	2 0-	1	4 0
Coke, 1st quality	1	0 0-	1	1 0
,, 2nd quality	0	18 6-	1	0 0
Black .....per ton	17	0 0-	17	10 0
Canada, Staff. or Gla., at Liverpool	£13	0 0-	13	10 0
Black Taggers, 450 of 14 × 10	£30	0 0-	—	

* At the works, 1s. to 1s. 6d. per box less for ordinary; 10s. per ton less for Canada; IX 6s. per box more than IC quoted above, and add 6s. for each X. Terne-plates 2s. per box below tin-plates of similar brands.

REMARKS.—A good deal more attention has been given during the past week to the various phases through which the Eastern Question has moved than to dealings in the metal market. Continental politics on the one hand, and the holidays at Epsom, have contributed to contract actual business within very narrow limits indeed. The depression which has been so marked a characteristic of our markets for so long continues to be as severely felt as ever, and it would appear almost impossible that the existing state of things can be much further prolonged without bringing with it a series of disastrous consequences. The complete stagnation of business seems rather to increase in intensity than to diminish, and there is not the slightest prospect at present of any improvement. Amongst the mercantile community failures are deemed to be not far distant, and manufacturers are not likely to escape unscathed. In fact, losses have been so universal that the power of the trading classes if very seriously crippled. Not only has the foreign trade in some metals, as well as in other departments, collapsed, but the home trade is also becoming greatly contracted—a deficit in the revenue of the country is one of the results, and the necessity of meeting the public expenditure by probably increased taxation, just at a time when such a burden is felt to be excessive, is another. During the week the tendency of quotations on the metal market has been downwards, and it still continues to be so.

COPPER.—The market has been very quiet, and business very limited. In the early part of the week Ormeneta has been sold in small parcels at 78*l.* to 78*l.* 10s., and other g.o.b.'s 77*l.* 15s. prompt, usual cash terms. For July delivery 77*l.* 10s. has been accepted. Later on the price of Chili bars fell to 77*l.* 10s., cash, and 77*l.* for arrival, at about which quotations the market closes. Australian is somewhat easier. Wallaroo, 83*l.* to 83*l.* 5s.; and Burra, 83*l.* There is no change to report in manufactured. English tough, 83*l.* to 84*l.* Best selected, 84*l.* to 85*l.* India 4 by 4 sheets, 88*l.* to 89*l.* Strong sheets, 90*l.* to 92*l.*

IRON.—The report from South Wales continues devoid of any improvement, but at the same time matters do not seem to grow worse; indeed, in the matter of clearances more iron is being shipped away now than was reported a few weeks ago. The principal outlet continues to be Sweden, to which country important shipments are made, and also to Italy. The home trade, if there be any alteration at all, may perhaps be said to be a shade brisker, but the markets abroad, which usually afford real substantial support to the trade of this district, are at the present moment doing little or nothing. Enquiry from America has pretty well ceased for the present. So far as it is possible to form an opinion as to the condition of the iron trade in South Wales, it may be said that the works are employed about half time. The market for pig-iron is very quiet, and no doubt stocks are on the increase. The depression which exists throughout the iron trade is also felt in the steelworks, where difficulties are arising much in the same way as in the ironworks. In the North of England the condition of affairs remains unaltered, or, if there be any improvement, it is hardly perceptible. Pig iron is being shipped to some of the continental ports, and the deliveries to Scotland are still maintained. During last week 5000 tons were shipped to North Wales, but the trade generally continues to be very dull, and as the make is not reduced in proportion to the demand there is little doubt but that the next return will exhibit an increase of the stocks.

The report of Messrs. Hopkins, Gilkes, and Co. (Limited), of Middlesborough, lately issued, exhibits a loss of 5000*l.* during the year. The Skerne Iron Company (Limited), of Darlington, have also issued their report, in which a profit of about 5000*l.* is shown; but it is thought unadvisable to declare a dividend. The company may, however, be congratulated upon being in a position to show any profit at all, for there are very few iron concerns which are not working without making any profit, and some, it is known, are working to a loss. No. 1 iron is quoted 58s. to 59s. 6d.; No. 3, 46s.; No. 4, forge, 45s. net cash. In the finished iron trade there is no change for the better to report. It is hardly possible for the rail trade to be in a worse condition than it is, and as this department forms a very important staple of the district, it is a very serious matter. The plate trade is very quiet, and the tendency of prices is in buyers' favour. Rails are quoted 6*l.* 5s.; ship plates, 7*l.* 7s. 6d.; angle iron, 7*l.*; merchant bars, 6*l.* 10s.; and puddled bars, 4*l.* 10s. On Saturday last the following notice was given to the employees in the rail-mills of Messrs. Bolckow, Vaughan, and Co. and Messrs. Hopkins, Gilkes, and Co., of Middlesborough—"You are hereby informed that your services will not be required at these works after the expiration of 14 days from the above date." By the operation of these notices it is calculated that a week hence there will be thrown out of employment between 1500 and 2000 men. The belief is current that the reason for the issue of these notices is that the masters have no work with which to employ the men; but the men are generally of opinion that this is but the prelude to a proposition for the further reduction of wages. There was business done in Glasgow on Monday in pig iron, at 57s. 9d. On Tuesday the market was quiet, but exhibited no variation in quotations, and this has been the condition of the market up to to day. To day prices have further given way, and the closing quotation for the week is 57s. 7½d.

SHIPMENTS.

Week ending May 27, 1876	Tons 10,696
Week ending May 20, 1875	9,768
Increase	928
Total decrease for 1876	35,326

LEAD.—Good soft English pig is quiet at 21*l.* 5s. to 21*l.* 10s., and soft Spanish without silver is quoted 20*l.* 15s., but without inducing much business.

QUICKSILVER.—This metal is in very limited demand, and quotations are a shade lower, 9*l.* 15s. to 10*l.*

TIN.—The market, which closed with a drooping tendency at 75*l.* to 75*l.* 10s. for Straits, opened flat at the beginning of the week, and sales of small parcels of Straits and Australian were reported at 74*l.* 10s., but on Tuesday considerable activity characterised the market, and parcels of Straits tin changed hands at 74*l.* 15s. to 75*l.* On Wednesday the report of the public sale of Banca at Rotterdam was received, amounting in all to 29,300 slabs, which realised 45 guilders to 45¾ guilders, the average being 45¼ guilders, or about 77*l.* per ton, delivered here. Upon receipt of this report the market for Australian gave way, and business was done down to 74*l.* 10s. to 75*l.*, closing with buyers at the latter price. On Thursday the market rallied, and business was reported in Straits 75*l.* 10s. to 74*l.* 10s., and for Australian 74*l.* was accepted. To day the market remains about 74*l.* 10s., but beyond the operations of a few speculators very little was done. English ingot tin is quoted 79*l.* to 80*l.*

TIN-PLATES.—The market is very weak, and sales are reported in Liverpool in common cokes as low as 18s.

THE IRON TRADE.—(Griffiths's Weekly Report).—Friday Evening. The Glasgow market for G.M.B. pig iron has been steady during the week, closing this afternoon with sellers at 57s. 9d.—a shade lower than the closing price this day week. We quote makers' No. 1 iron:—Gartsherrie, 65s. 6d.; Coltness, 69s.; Calder, 67s.; Langloan, 67s. 6d.; Summerlee, 62s. 6d.; Monkland, 58s. 6d., f.o.b. Glasgow: Glengarnock, 61s.; Eglinton, 57s. 6d., f.o.b. Ardrossan; Shotts, 68s., f.o.b Leith; Kennlel, 59s. 6d. f.o.b. Bo'ness. We have little change to report in the iron trade this week. Probably the manufacturers in Yorkshire and Staffordshire have been a little more active in clearing off small orders for shipment before the commencement of the Whitsuntide holidays, and no doubt from the same cause the deliveries of all kinds of iron this week at the Port of London have been greater than in any week during the month of May. We cannot say that the prospects of our market have improved; on the contrary, competition in second-class iron is more keenly felt, and buyers constantly succeed in obtaining slight concessions on late rates. The Middlesborough makers particularly look closely after stray orders, and try hard, though unsuccessfully, to compete with Belgian bars in this market. The orders for hoops have been less brisk during the last month. The demand for sheet iron, however, is improving, and we hope after the holidays to find this branch of trade more active; 2000 tons of rails have been purchased by the Great Eastern Railway Company. These rails are to be made of a superior quality, and a moderately fair price is to be paid for them. The Bolow Vale Company took this contract. We have also to report a contract made yesterday for 2000 tons steel rails at 7*l.* 13s. 6d. per ton into trucks. These were taken by a Yorkshire house. We have no change to report in Scotch pig-iron, the market in both makers' iron and warrants is the same. The Birmingham Exchange yesterday was cheerful, but little business was done. At Middlesborough, on Tuesday, the market was very flat, and it was reported that Bolckow and Vaughan and another large house had resolved to reduce their make of iron considerably. Large numbers of their men will be discharged in this district. Numerous small strikes are going on in various parts of the country in different departments of the trade, but these foolish efforts of the men to resist the inevitable are, and will be, unavailing. Wages must and will be reduced in every district in England where coal and ironstone are raised and iron is manufactured. The recent movement in tin has given way, and in face of the action of the Dutch Government, the price of this metal will probably recede again. The tin plate trade continues in a very unsatisfactory condition. Orders are not brisk, and the makers are absolutely unable to work to a profit.

Messrs. HARRINGTON, HORAN, and Co. (Liverpool, May 31).—Arrivals here during the fortnight of West Coast, S.A., produce:—Potosi, from Valparaiso, 557 tons bars, 100 tons ingots; Iberia, from Valparaiso, 785 tons bars.—At Swansea, Delaware, from Panta Blanca, 545 tons ores; Powhattan, from Carrizal, 610 tons regulus; Uncas, from Pisco, 630 tons ores. Stocks of copper (Chilian and Bolivian) in first and second hands, likely to be available, we estimate at—

	Ores.		Regulus.		Bars.		Ingots.		Barilla.
Liverpool	—	.....	—	.....	7740	.....	398	.....	9
Swansea	1668	.....	2359	.....	1253	.....	—	.....	18
Total	1668	.....	2359	.....	8993	.....	398	.....	27

Representing about 10,806 tons fine copper, against 9732 tons May 15; 12,752 tons May 31, 1875; 18,140 tons May 31, 1874; 22,700 tons May 31, 1873. Stock of Chili copper in Havre, 3955 tons fine. Stock of Chili copper afloat and chartered for to date, 11,823 tons fine. Stock of foreign copper in London, chiefly Australian, 5665 tons fine.

Messrs. RICHARDSON and CO.—COPPER: The stocks of Chili copper produce remaining unsold on May 1 were—ore, 700 tons; regulus, 2899 tons; copper, 684 tons; barilla, 18 tons. The month's arrivals increased to—ore, 2415 tons; regulus, 5316 tons; copper, 1384 tons; barilla, 18 tons. The private sales were—ore, 647 tons; regulus, 2327 tons; copper, 131 tons. On June 1, therefore, the total unsold at Swansea was—ore, Chili, 1768 tons; Cape, 673 tons; Australian, 264 tons; British, 95 tons—2800 tons of ore in all; regulus, 2989 tons; copper, 1253 tons; and barilla, 18 tons. These totals represent about 3250 tons of fine copper. The private sales reported during the last month have been 400 tons of ore at 15s. 4½d. per unit—200 and 1400 tons of regulus on the spot at 15s. 10½d. and 16s. respectively, and 1300 tons of regulus to arrive at 16s. per unit. The Chili charters advised since our last have been:—For the last half of April 850 tons bars and ingots, 150 tons metal in ores and regulus for England, 850 tons bars for France, and 550 tons pure for America—this latter it is thought will ultimately find its way to our market. For the first half of May 1200 tons bars and ingots, 50 tons pure in ore and regulus for England, and 55 tons bars for France. Our copper market is somewhat dull; in bars considerable fluctuations have taken place, but furnace material shows scarcely any variation since our last issue. The aspect of politics has already created very cautious movements in business generally, which state of things will, no doubt, continue until the present complications resolve themselves into some definite form.

Messrs. SANFORD and BIRD.—COPPER was steady during the first half of the month, but prices have since relapsed in sympathy with other metals, and the market closes weak. The reduction on all descriptions amounts to from 20s. to 40s. per ton.—TIN: The market has been well maintained during the month, and a considerable quantity of Straits tin changed hands from 74*l.* to 76*l.* 10s. The Dutch Trading Company, at their bi monthly sale of Banca on the last day of the month, withdrew their limit of 70 fl., and sold the whole quantity of about 1000 tons at an average of 45½ fl., equal to 77*l.* per ton in London. This had the immediate effect of depressing prices here, business being down to 72*l.* 10s. for Straits; but the market has again rallied to 74*l.* 10s., at which it closes.

The MINING SHARE MARKET has not been quite so firm or so active this week, and tin mines have been much weaker.

The sale of Banca tin, on Wednesday, was at a lower rate than was generally anticipated, and the result has been that the English smelters have put down the standards for tin ore in Cornwell 2*l.* per ton. In March last the price made at the Dutch sale was equal to about 85*l.* 10s. in London. This week 29,300 slabs were sold, at an average price equal to about 76*l.* 10s. in London.

The new Manganese Bronze is stated to be somewhat superseding the use of brass in the fittings of machinery and mine work in Cornwall. Its superiority has, it is said, been well tested, and some of the principal mine agents are now ordering it. This cannot be too widely known, as the more this metal comes into use the greater the demand will be for tin, of which it contains about 10 per cent.

Tincroft, 18 to 19, ex div.; at the meeting a dividend of 5s. per share was declared. The profit on the quarter was 1307*l.*; balance in hand, 1531*l.*, out of which the dividend was declared. The costs were charged to January. The tin sold (214 tons) realised 8875*l.* The winze sinking below the 234 is worth 100*l.* per fathom. The aggregate value of the different points in operation is 204*l.* per fm. In 1872, when the same quantity of tin was sold, the dividend was 12,006*l.* Carn Brea, 36 to 38; at the meeting here the accounts showed a loss of 1345*l.* on the quarter. The tin sold realised 7045*l.*; copper, 1574*l.* The costs are charged up to January. The mine is looking well. The wize below the 238 is worth 60*l.* per fathom. The 288 end east, 40*l.* per fathom. Ding Dong, 3½ to 4; at the meeting here the accounts showed a debit balance of 490*l.*, and a call of 15s. per share was made. The accounts were charged up to April 20. Hingston Down, ⅝ to ¾; The accounts here showed an available balance of 1879*l.*, but no dividend was declared. The loss on six months working was 255*l.* Cook's Kitchen, 4 to 4½; East Caradon, 1¼ to 1⅜; Marke Valley, 1⅛ to 2¼. Penstruthal have advanced to 14s., 15s. South Carn Brea, 17s. 6d. to 20s.; South Condurrow, 3⅜ to 4¼; South Frances, 1¼ to 1⅜; Wheal Agar, 2½ to 3; Wheal Crebor, 2 to 2½; Wheal Grenville, 1¼ to 1½. Wheal Uny, 1½ to 1⅝; a call of 3s. per share paid. West Frances, 7 to 8; West Seton, 25 to 30.

Devon Great Consols, 3 to 3½; the accounts presented to the meeting on May 30, particulars of which will be found in another column, show sales of copper ores for six months, to April 29, 3898 tons, realising 15,638*l.* 14s. 9d.; sales of arsenic, 4544*l.* 19s. 5d. The costs of the mine were 16,946*l.* 11s. 11d.; dues, 1475*l.*; reduction works, 3121*l.* 12s. 8d.; balance in hand, 5936*l.* 13s. 9d., as against 7758*l.* 7s. 10d. in hand at last meeting. The valuation of plant, machinery, &c., shows a balance of assets 66,767*l.* 12s. 8d. The directors report that they have not succeeded in getting a satisfactory price for the arsenic to be manufactured during the year. The reserves of copper ore have increased since the last valuation nearly 5000 tons, and are now estimated 31,672 tons. The arsenical mundic is estimated at 22,500 tons. Parys Mountain, 16s. to 18s.: another branch of sulphur, 6 in. wide, has been met with in the 90 cross-cut, and water is still issuing from the forebreast. The 45 end east has improved since our last.

Roman Gravels, 15 to 15½; at the meeting, on Tuesday (particulars of which will be found in another column), a dividend of 8s. 6d. per share (5120*l.*) was declared. Tankerville, 10½ to 11; the 167 west, now 16 fms. from shaft, is in a splendid country, with a course of lead ore on each side, worth 12 tons per fathom, and getting richer as it advances. South Roman Gravels, 1 to 1½. West Tankerville, 1⅞ to 2; the sampling here is 25 tons of lead ores. Pateley Bridge, 3½ to 4; Great Laxey, 17 to 17½; North Laxey, 20s. to 22s. 6d. Ladywell, 1½ to 1⅝; the sampling is 20 tons of lead ore. Rookhope, 20s. to 22s. 6d.; the report, which arrived too late for our last, shows that the various points in operation at the mine are valued in the aggregate at over 6 tons of lead ore per fathom. Another monthly sale of 25 tons lead ore will take place on the 15th, which, we understand, about meets the costs of the mine. Mr. Blenkiron writes that he hopes to push forward the 42, and in the meantime to increase the returns. Van Consols, 1⅞ to 2; Glyn, 2⅛ to 3⅛; Assheton, 1½ to 1⅝; West Assheton, 1⅞ to 2; Pennant, 5 to 5½; Old Treburgett, 8s. to 10s.; Pennerley, 2 to 2⅛; West Chiverton, 17 to 18.

Glenroy, 6½ to 7½. About the beginning of the present year Glenroy formed, as we stated last week, part of the Great Laxey Mine, and was held under the same lease from the Crown. It is on a parallel lode, and about a mile to the west of the principal workings of Great Laxey. Some years ago, if we remember rightly, the Great Laxey Company raised a large sum of money to erect smelting works, which, for some reason or other, were never commenced, and the money thus raised was chiefly expended in opening out Glenroy, in erecting machinery upon it, and in making a reservoir for water at a cost of about 1500*l.* Altogether the expenditure upon Glenroy was about 14,000*l.* Then came a long dispute with the Crown as to the renewal of leases, and the consequent imposition both upon Great Laxey and Glenroy of a royalty of 1-8th. Great Laxey has paid the Crown upwards of 150,000*l.* in royalties, is at present and has been for some time, paying 30,000*l.* a-year in dividends to the shareholders, and the managers under all circumstances and with such royalties would not spend their profits on Glenroy. The Great Laxey Company then sold it to their late manager, Capt. Rowe. When worked by Great Laxey a rich course of ore worth 3 or 4 tons of lead ore per fathom, and the same quantity of blende, was discovered in the 25 fm. level, and a good deal of ore raised from it. A winze was then sunk 4 fms. below this level where the lode split, and the best part carrying the ore with it went off altogether away from the engine-shaft. The shaft was then sunk to the 60, and at that depth it was always Capt. Rowe's intention to cross-cut to the productive part or parts of the lode. This however, was never done, and in his opinion the principal lode is standing whole and improved from the 60 to the 25 level. On this point he wrote some months ago: "Now, if this course of ore is gone off, as I suspect and believe, then all is standing in whole ground down to the 60 fm. level, and only wanting cross-cuts. Thus there is every probability, and to my mind a great probability, of laying open a rich mine in a few months; in fact, if the cross-cuts were successful the purchase would change into a property worth nearer 100,000*l.* at once." Upon these reports the mine was taken up by private parties in 100 shares of 80*l.* each, which, after paying the purchase money and the Crown, left 1000*l.* in hand for proving the mine. A new lease was also applied for, and the promise obtained from the Crown, at 1-12th royalty. Capt. Rowe then put out one or two short cross-cuts, and in each place found the lode worth 80*l.* per fathom for lead and blende, and of precisely the same character as in Great Laxey. A limited liability company was then registered in 2000 shares of 4*l.* each fully paid up, and it is the intention ere long to make the mine into the same number of shares (15,000) as Great Laxey, which in its early days was taken from a private company and divided into 15000 shares of 4*l.* each, which quickly rose to a very high price, and after paying 18*l.* per share in dividends still remain at 17*l.* per share. Capt. Rowe, who was manager of Great Laxey through all its early career (altogether 28 years) has the highest possible opinion of Glenroy, not only as a speculation but as an investment. A telegram from Glenroy on Thursday stated—"Breaking lead fast; winze now empty (clear); commenced last night to sink on the ore discovered." This "sump," another telegram states, is quite as rich for lead and blende as the lode above. North Laxey, 20s. to 22s.; a telegram on Friday states—"Lode in the 136 end 3 ft. wide; lode looking remarkably well; south end improved for lead." Van, 37 to 39; the sale of lead for the month is 600 tons, and 200 tons of blende, realising 9586*l.* 5s. East Van, 9⅜ to 10¼; the agent states that lead is being cut in both cross-cuts, and a few days may produce great changes.

Argentine, 5½ to 6; Birdseye Creek, 1½ to 1⅝. San Pedro, 1⅜ to 1⅝; the advices this week show an improvement in the chiffon below the 88, which is now yielding 4 tons of rich copper ore (of 25 per cent.) per fathom. The 88 fm. stope is worth 8 tons of 25 per cent. ore per fathom. Chontales, 6s. to 8s.; Eberhardt and Aurora, 7½ to 8; Emma, 15s. to 20s.; Flagstaff, 2 to 2¼; Frontino and Bolivia, 2⅛ to 2⅜; Javali, 6s. 6d. to 8s. 6d.; Last Chance, 12s. 6d. to 17s. 6d.; Pestarena, ¼ to ⅜; Richmond, 8 to 8¼; Santa Barbara, 1½ to 1⅝. Condes, 6 to 6½; the first shipment of ore, consisting of 150 tons, has arrived at Liverpool, and a second is due in 14 days.

The market for Mine Shares on the Stock Exchange during the week has been without special feature: the fortnightly settlement, completed on Wednesday, interfered with the course of ordinary business, while there has been a marked disinclination to enter into new business upon the eve of the holidays. Generally, however, the tendency may be said to point to firmness upon the resumption of regular business.

Exchequer have been again largely dealt in, and close 2 to 2⅛; there have not been any letters this week, owing to the absence of the manager at Peavine, personally testing the advantages of some newly-constructed furnaces. Messrs. Johnson and Matthey have assayed the stone of ore received by the last mail, and the following is the highly satisfactory result:—"We have examined the sample, mineral, marked as under, and find the following to be the result: Mark of sample, from 200 ft. stone, Exchequer, 200 ft. in from shaft. Produce of gold, 2 ozs. 12 dwts. 6 grs. per ton of 20 cwts. of ore; produce of silver, 243 ozs. per ton of 20 cwts. of ore. I.X.L., 1 to 1¼; and a steady business doing. Condes of Chili, 6 to 6⅛; the first shipment of ore has arrived, and will be sampled and sold forthwith; a further shipment is due in a few days. The latest reports fully confirm the previous advices. One of the levels is in a course of ore 9 ft. wide, valued at from 80 to 90 ozs. silver per ton; the discoveries on the side lodes are apparently of considerable value.

Richmond Consolidated, 7¾ to 8⅛; cablegram received "Week's run, $40,000." Work has this week been recommenced at the refinery, so that all the works connected with the mine are now in operation. The manager reports that the drift opened at 50 ft. above the 700 level is looking well, being in good ore; this is an important work, as it is determining the bulk of the ore reserve between the 600 and 700 ft. levels. The No. 2 stope at the back of the 600 is reported to be looking well, and widening out; this stope is at the back of the mass of poor ironstone ore which was found to occupy a great portion of the space between the 500 and 600 levels, where Prof. Price, in his report of June, 1875, estimated that a reserve of 70,750 tons existed. In his report of February last he gives the opinion that the ore body may be found to come in at the back of the ironstone. The No. 2 stope is testing the correctness of this opinion. Eberhardt and Aurora, 7¾ to 8.

Argentine, 6 to 6½; at the reduction works active operations were commenced last week, and on ores exclusively from the Piqué section of the property; the result will be announced within a fortnight: 36 heads of stamps are expected to be at work in less than three months.

The market for Gold Washing shares on the Stock Exchange has been quiet during the week. The excitement caused by the news from the East has interfered prejudicially on this description of security, although shares are not materially lower in value. It is expected that future advices will be more important, as work can be carried on with greater energy now that the cold weather has passed away. Birdseye Creek, 1 to 1¼; the last news brings down the information to date of the telegram announcing result of clean-up for April. The agent is of opinion that he has a poor streak of gravel now under operation, and the possibility is that it may wash out before very long. Shares are weaker, but this may be owing to the universal depression existing in all descriptions of investments. Cedar Creek, ½ to ⅝; Col. Ludlum is pressing on all matters with every possible speed. The washing is resulting in good profits, as shown in last telegram. The mining of the Yankee Tunnel is being pressed on by a full pare of men, and the ditches belonging to the company are bringing down a full supply of water. Shares are quiet, and without change from last week's quotations. Sweetland Creek, 1⅞ to 2; The agent (Mr. McLean) does not report any change. Washing is steadily in progress, and a clean up will be made during the present month. Shares quiet, and without much change in value, though freely offered. Blue Tent, 3⅛ to 3⅜; at date of last advices everything was being put in readiness to take advantage of the water as soon as it could be got through the ditch. It will be remembered that a telegram was received last week announcing that water was steadily flowing through the entire length. Everything is now apparently progressing well, and if the season lasts on, the results are pretty sure to be satisfactory.

Van, 36 to 38; the usual monthly report will be found in another column. The mine is evidently without change, and everything progressing satisfactorily. The sale on Thursday—600 tons of lead and 200 tons of blende for the four weeks—realised 9586*l.* 5s. Grogwinion, 6 to 7; latest accounts continue of a satisfactory character, the developments on No. 4 lode continue to open out well, and all other points show a progressive improvement. We hear that several influential shareholders have this week paid a visit to the mine, and expressed themselves much gratified with their inspection. The shares have been enquired for, and at the settlement a large number were taken up for investment.

Pateley Bridge, 4¼ to 4⅜; the Lumb vein in the south cross-cut, at the 10, is worth 12*l.* per fathom, and is to all appearance opening out into a very rich course of ore. Fielding's vein, going northwest in the east cross-cut, at the 20, has considerably improved within the last day or two, and is now worth 1½ ton lead per fathom. There is a rich course of ore gone down in the winze from the level above, a few fathoms in advance of this end. The same lode in the south east end is producing 1 ton lead ore per fathom. Other parts of the mine are presenting favourable indications, and

altogether the mine is looking exceedingly well, and with every appearance of improving. West Pateley, 5 to 5½; the cross-cut from the joint adit is being pushed on with all possible speed. The two shafts are also in good course of sinking, and looking well.

Roman Gravels, 15 to 15½; the details of the meeting appear in another column. A dividend of 8s. 6d. per share was declared. During the year 2344 tons of lead ore were sold, realising 35,145*l.*, an average of 14*l.* 19s. 10d. per ton; and 30 tons of blende, at 3*l.* 6s. per ton, or 99*l.*, together 35,244*l.*; this added to 3606*l.* brought from last account, makes a total of 38,850*l.* Upon labour, materials, and management there has been expended 15,961*l.*, and for royalty 2385*l.*; three dividends (exclusive of that declared on Tuesday) were paid, amounting with income tax to 15,427*l.*, and a further sum of 16,000*l.* has been transferred to meet the expenditure upon permanent works, leaving a balance of 2967*l.* to be carried forward. The manager says that they are only just beginning to work this great mine—a statement which he hopes to verify as the new shaft goes down. Wye Valley, 6¼ to 7½; a parcel of 40 tons of lead was sold on Thursday, at 14*l.* 6s. per ton. The driving of the 22 east is still going on in favourable ground; the lode is here estimated to be fully 70 ft. wide, and its appearance highly encouraging. A large deposit of lead is expected to be here opened out—larger, in fact, than the appearance in the level above (the 10) warranted, although very rich. The new discovery in the adit east is looking promising, the ground being highly mineralised, and the lode of great size. West Wye Valley, 3⅞ to 4¼; good progress is being made in sinking Brookes' shaft, which in a few fathoms will cut the lode. The other points are looking well, and surface operations going on rapidly. Pennerley, 2⅛ to 2⅜; the 130 east is producing good stones of lead. In the winze sinking below the 120, in advance of the end, the lode is worth 5 tons per fathom. The 100 east is producing 1 ton of lead per fathom, and promising for an improvement. At Potter's Pit the cross-cut north, in the 90, is on the point of intersecting the lode. The lode in the winze and stope west of cross-cut, in the 75, is worth 45*l.* per fathom. The drivages in the 25 and 35, on gossan lode, to develope the ore recently discovered, are progressing well, and showing good indications. Other parts of the mine unchanged.

St. Harmon, 3¼ to 3⅜; these shares have again advanced, large purchases having been made at the increased price, and taken up for investment. Operations at the mine are going rapidly ahead, and the driving of the principal levels will soon be resumed. It should be remembered that although the former owners sunk the shaft a great depth, the levels had hardly made any progress when their capital came to an end, but that so far as they had advanced the result was most satisfactory. The new company will extend these levels into the ore ground as rapidly as possible, and thoroughly prove and develope the same upon an extensive scale, and judging from past experience and the indications there warrants the belief that the operations will prove successful.

Van Consols, 1⅞ to 2¼; all is progressing with regularity. The stopes in the bottom of the mine are reported to be improving. Great West Van, 10s. to 12s. 6d.; the cross-cut at the 46, at Eliza's shaft, is extended nearly 7 fms., and it is expected that a good course of lead will be reached in a few fathoms further driving; 10 tons of lead have been sold this week to the South Wales Smelting Company. Penstruthal, 12s. 6d. to 15s.; the lodes are presenting unmistakeable signs that a rich course of copper is underlying the present bottom workings, splendid specimens of copper having been met with during the past month. Glyn, 3 to 3¼; the lode in the 15 continues to open up good lead ground, and the cross-cut at the next deeper level is expected to intersect the lode in time for the general meeting, which will be held shortly.

Devon Great Consols, 2⅞ 3¼; the details of the general meeting, held on Tuesday, appear in another column; the quantity of ore sampled during the past six months exceeded that of the previous half-year, but the proceeds were less; the amount received for arsenic also appeared to be less, but there is a considerable sum in the course of payment. Regret is expressed that the arsenic had not obtained a satisfactory price, the trade having evidently partaken of the general depression experienced in almost all other departments of business. One subject for congratulation is the fact that the heavy samplings during the past year have not impaired the stock of ore ground in reserve; on the contrary, the discoveries of ore have added to the reserves nearly 5000 tons since the last valuation was made—a clear proof of the continuous prosperity of the mines themselves. The manager computes the underground ore reserves have now reached a total of 31,672 tons, being an increase of nearly 10,000 tons during the year, and in addition to these reserves there is also an accumulation of halvans at the surface, which already amounts to several thousands of tons, and which, as soon as the necessary dressing machinery is completed, will be treated for the copper ore and arsenical mundic contained, and will shortly become available to increase the general returns. The net value of the copper ore reserves is estimated at 60,000*l.*, and the arsenical mundic at 22,000*l.* Hingston Down, ⅝, ¾; the details of the meeting appear in another column. In consequence of the partial failure of some of the most prominent points in the mine, the returns have not been maintained; but as the shaft is now down to the 160, and every exertion is being made to reach the run of ore ground gone through in the level above, and which so effectively contributed to the previous samplings, the falling off is hoped to be but temporary; the directors were unable to recommend a dividend, inasmuch as the computed costs were in excess of the returns. Cathedral (new issue), 30s. to 32s. 6d.; this mine is fast attaining the depth where a fine course of copper is confidently looked forward to.

Subjoined are the closing quotations—

Ashleton, 1 to 1⅛; Carn Brea, 35 to 37; Devon Great Consols, 2¼ to 3¼; Dolcoath, 35 to 37; East Caradon, 1¼ to 1½; East Lovell, 2 to 3; East Van, 9¼ to 10⅛; Glyn, 2⅞ to 3¼; Great West Van, ⅜ to ⅝; Great Laxey, 17 to 17⅛; Great Wheal Vor, ⅛ to ¼; Hingston Down Consols, ⅝ to ⅞; Marke Valley, 1⅜ to 2⅛; North Laxey, 15 16ths to 1 1 16th; Pateley Bridge, 4¼ to 4¾; Parys Mountain, ⅞ to 1; Pennerley, 2⅛ to 2⅜; Penstruthal, ⅝ to ⅞; Roman Gravels, 15 to 15½; Tankerville, 10¼ to 10¾; Tincroft, 17½ to 18½; Van, 36 to 38; Van Consols, 1¾ to 2; West Assheton, 2 to 2¼; West Basset, 4½ to 5; West Chiverton, 16 to 17; West Pateley Bridge, 5 to 5½; West Tankerville, 1⅞ to 2⅛; Wheal Grenville, 1 to 1½; Almada and Tirito, ¼ to ⅜; Argentine, 6 to 6½; Birdseye Creek, 1 to 1½; Blue Tent, 3½ to 3¾; Cape Copper, 38 to 40; Cedar Creek, ½ to ¾; Chontales, ¾ to ⅞; Colorado Terrible, 1¼ to 1⅜; Condes of Chili, 6 to 6½; Don Pedro, ⅛ to ¼; Eberhardt and Aurora, 7½ to 8; Emma, 1⅛ to 1⅛; Exchequer, 2 to 2¼; Flagstaff, 2 to 2¼; Frontino and Bolivia, 2½ to 2⅝; I.X.L., 1 to 1⅛; Javali, ¾ to ⅞; Last Chance, ⅜ to ⅝; New Quebrada, 3½ to 3¾; Oregon (pref.), 4 to 4½; Pestarena, ½ to ⅝; Richmond Consolidated, 7¾ to 8¼; San Pedro, 1⅛ to 1⅜; South Aurora, ⅛ to ⅜; Sweetland Creek, 1¼ to 2; Tecoma, ¼ to ¾; United Mexican, 2 to 2¼; New Zealand Kapanga, ⅛ to ⅜.

COLLIERIES.—The great depression which has been the leading characteristic of trade generally has made itself forcibly felt upon the iron and coal trades. All business men, no matter what may be their special vocation, complain of the existing dulness, and the great absence of commercial enterprise. Dull, however, as such and every trade may be, none are so in comparison with those of iron and coal, upon which every other branch of commerce has its own individual influence. As matters now stand, it is the opinion of nearly all that the lowest ebb of commercial depression has now been reached; and each approaching new quarter is regarded as the one which is to bring reaction and improved business. And to say that the coal and iron trades will not improve, and prices rise, is the same thing as saying that the prevailing inactivity in general business is to continue, and that no branch of commerce is to revive from its present torpidity. It is under these circumstances that we again call attention to our collieries, which we regard as unjustifiably neglected means of investment. Where these now pay well, surely they should command the favour of the public. The rise or fall of ordinary stocks or shares in no way affects them, while trouble on the Continent, or, indeed, actual war, would be hailed with acclamation by some coalmasters, being calculated rather to increase the demand for fuel, and so bring about better prices. In drawing attention to our collieries as an investment, it must be borne in mind we do so only with regard to those which still make good profits; and as to this, we must confess, only books and accounts are (in conjunction with durability, mining facilities and advantages), in our opinion, to be taken as evidence of *bona fides* and value. We have visited many collieries in our time, and can assure our readers that where there is any hesitation in showing accounts there is almost invariably something to be hidden and kept out of sight. Under these circumstances, we value a colliery first upon its mining capabilities, and next upon its accounts, though to the latter would be the safer to build upon, and common sense must be the guide for the former.

We constantly hear it said "We do not believe there is a colliery anywhere to be found that is making profits," but against this we are in a position to place facts and figures. We have recently visited collieries in South Wales, as also in the North, and we make it an invariable practice in the course of inspection to look, for our own guidance, into the books. In South Wales we can point out collieries making a fair profit, though we acknowledge these are few, while in the North we can speak of many realising not only a fair but a handsome profit. During the past week we have visited three of the largest collieries in Yorkshire, and according to their books we find that profits are being made of 1s. 9d., 2s., and 2s. 2d. per ton respectively. It is to such that we direct attention. They are good investments, for while yielding good returns now, when trade revives something handsome may be looked for. "It is an ill wind that blows no one any good," and deplorable as is the state of the iron and coal trades, it is likely to result in one benefit to all—some better and improved condition in the labour market. We have all heard of the lamentable strikes and the absolute starvation which has visited the colliers, who beg for bread from door to door. Most of us know of the great strike now prevailing in South Yorkshire; how processions of men have paraded the streets, taking alms from people apparently better off than they, and much commisseration is entertained for the poor collier, badly paid, and suffering to maintain his rights as against his employer. A feeling in their favour has arisen merely, we imagine, on the principle that we are all inclined to side with the weakest, and without having the facts before us.

As we have endeavoured to show, there are some collieries making good profits, and it is these we recommend; but the vast majority are so placed that they are not so fortunate, and in order to obtain even a small profit a reduction in the cost of production becomes a necessity, and, consequently, of the price of labour. The men refuse this, though receiving wages such as many a poor gentleman, or even clergyman, would slave, and even go down on his knees to obtain. At the collieries we visited last week, some of the largest and best managed in Yorkshire, we find the average wages of the colliers is 7s. 11d. per day, while at one of the collieries at which the men are on strike the average wages are 8s. 3d. per day (boys getting but 3s. and the labourers 6s.), while some of the men get as much as 15s. to 25s. For work done we begrudge not a good wage, but when we find that with low wages men work six days a week and are contented, whereas with high ones they work but two or three, obtaining no more per week than when the price of labour was low, and are, moreover, discontented and striking, we throw up our hands in disgust. Under these circumstances we think those giving succour to the men on strike are failing in their duty. We see not why the public should pay for the keep of these men in the Unions, and believe that starvation is one of the only remedies for the state of things we have described.

But, as we have endeavoured to show, there are some collieries which, notwithstanding the low price of coal and the high cost of labour, are doing well, and it is to these we draw attention as being among the best investments now obtainable. The public are justly disgusted with foreign stocks, and the frauds played through them, while commerce is in so depressed a state that even our manufacturing industries must yield to good mines and collieries.

Thorpe's Gawber shares close 4¼ to 5; New Sharlston, 3½ to 4. Chapel House, 3¼ to 3¾; the new pit is down 300 yards, and a third seam 3 ft. thick has been cut. This colliery is now making a clear profit of 2s. per ton on its output of 6700 tons per month, and with a view of making the future secure has entered into large contracts for the sale of its produce; in fact, we understand that two-thirds of its output is sold in advance for 12 months to come. This is a great feature in favour of this property.

Alltami, 5 to 5½; the Lily Pit has passed through coal in the sinking, as expected, and in a few days important news is expected. The engines erected over this shaft are very powerful, and capable of raising 400 or 500 tons per diem. The great feature is that although a depth is attained of nearly 100 yards, no pumps are required, but the water is easily managed with drawing barrels occasionally used. If the Main coal which is now reached should be worked without pumping power—and there seems every probability of this—good profits will, no doubt, be made in the winning, even at present low prices. At Old Farm pits, in the new portion of Alltami, work is progressing, and the making of the tramway and wharf is, we hear, to be started at once. This will give the necessary facilities for selling the produce.

Llay Hall. 8 to 10; coal is not yet in the market from here, although several splendid seams have been passed through. The brickworks are idle, pending the erection of new machinery, which the manager expects will enable much larger profits to be made in this department than hitherto. The company possesses a great and valuable property.

Bilson and Crump shares close at 6½ to 7½, and as good profits are being realised, we regard them as unreasonably neglected. Cardiff and Swansea close at 2 to 2½ (9*l.* paid). In the Birmingham district prices close as follows:—Cannock and Huntingdon, 1½ prem.; Hamstead, 1 prem.; Perry Colliery, 1 prem.; Sandwell Park, 26 to 27; new shares, 17¼ prem.; Spon Lane, ½ dis.; West Cannock, 10 prem; new shares, 3 prem.

The Standards of Tin Ore were reduced on Thursday 2s. per cwt., and are now 70s. and 71s.

GREAT DYLIFFE has further improved in two or three points.

Mr. Richard Mitchell (it will be seen from our advertising columns) has removed from Abchurch Chambers, Abchurch yard, to 7, Union court, Old Broad-street, E.C. Mr. Mitchell is prepared, in addition to his secretarial duties, to undertake those of an accountant and auditor, and to act in the capacity of official liquidator.

The Vice-Chancellor Hall has appointed Mr. Cape (Cape and Harris) provisional official liquidator of the Central American Telegraph Co. (Limited).

The Master of the Rolls has sanctioned the payment of a dividend of 3s. in the pound to the creditors of the Phœnix Silver-Lead and Blende Mining Company (Limited), which is now payable at the offices of the official liquidator, Mr. F. F. Buffen, Wool Exchange, Coleman-street, E.C.

The directors of the New Zealand Manganese Mines (Limited) announce the payment, on and after June 5, of a further interim dividend for the year 1875 of 2s. per share.

J* With this week's Journal a SUPPLEMENTAL SHEET is given, which contains:—Original Correspondence: Pacific Coast Mining Notes (J. D. Power); The Richmond Mine, and its Management; The Emma Mining District—the Great Emma Vein (H. Sewell); Eclipse Mining Company; Rossa Grande Gold Mining Company (C. W. Williams); Mining in Queensland; The Necessity of an Assay Office (E. Skewis); The Copper Standards (T. J. Barnard); Cardiganshire Mines, New and Old—No. VI. (A. Francis); Improved Process in Treating Ores; Birmingham Blakely Hall Coal and Ironstone Company (Limited); West Chiverton Mine (G. Sharp); Grogwinion Lead Mine; Deposits of Copper at Nanttle Vale, Carnarvonshire (J. Roberts); "Circular" Mining; The Pennerley Mine, and its Detractors; Penstruthal Mine—The Wild Duck, or Sportsman's Arms, Meeting—Roads, Streets, and Pavements—The Law of Mines, Minerals, and Quarries—Foreign Mining and Metallurgy—New Zealand—Rolling Mill Products at the Centennial—Improvements in Iron Making—Patent Mining Picks—Patent Matters—Meetings of the Skerne Ironworks, Roman Gravels, the New Appletrewick, Duchy Great Consols, West Esgair Lle, Devon Great Consols, Hingston Down Consols, Trebeigh Consols, Carn Brea, Tincroft, and Llanrhaiadr Companies.

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EXPLOSIVES ACT, 1875.

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Notices to Correspondents.

*** Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be *filed* on receipt; it then forms an accumulating useful work of reference.

WALKER'S PATENT DETACHING HOOK.—In the article on Walker's patent detaching hook, which appears in the Journal of May 13, my name is given as the inventer; and as this is not correct and misleading, it being only manufactured by me, and the invention of Mr. William Walker, mining engineer, Saltburn-by-the-Sea, Yorkshire, perhaps you would kindly correct this error.—T. F. WALKER: *Oxford street, Birmingham, May 26.*

PATENT CALCINERS—"J. Y. P." (Pontesbury): The address of Mr. John Hocking is Trewirgie terrace, Redruth.

ROSSA GRANDE GOLD MINING COMPANY.—Having seen in the Journal some months ago very encouraging reports on this company's property from a gentleman of experience in mining in Brazil (also in last week's we find a favourable result the Santa Barbara Company has attained, whose property I think is not far from Rossa Grande), I should like to know whether any steps has been taken to secure this gentleman's service, and give the mine a fair trial.—READER.

FERRO-MANGANESE.—We have several letters for "Ferro-Manganese," which we shall be glad to forward on learning an address.

TEMPERED GLASS.—"R. G." states that M. De la Bastie's method for toughening glass has long been known in England. He refers to Dr. Ure's "Dictionary of Arts," &c., published by Longman in 1860, where, in speaking of glass, the following remark is made:—"Its fragility may be considerably diminished by annealing it in water, or, better, in boiling oil." (Page 342, vol. II.)

GOLD.—"R. G. H." writes to the *Times*:—"Your correspondent asks 'What would the treasures of Cræsus or Solomon be to the 500 tons of gold in the vaults of the Bank of France, value about 75,000,000*l.*?' If your correspondent will kindly turn to 1st Chronicles, xxii., and 13th verse, he will see that the gold alone prepared by David in his trouble (marginal reading, 'in my poverty') was 100,000 talents of gold; and taking the talent of gold at 94 lbs. (see 'Imperial Bible Dictionary,' by Patrick Fairbairn, p. 1053), this would give about about 4195 tons of gold, equal to, at 150,000*l.* per ton, 629,400, 00*l.*"

SHARE DEALING.—We never interfere in the sale or purchase of shares; neither do we recommend any particular mine for investment or speculation, or broker through whom business should be transacted. The addresses of most of the latter appear in our advertising columns.

Received,—"R. W."—"Seller" (West Mary Ann)—"M. E."—"Investor" (Pontefract)—"Miner:" Perhaps next week—"Shareholder" (Leeds): We think not—"T. N. E."—"Reader" (Manchester)—"Shareholder" (Richmond)—W. T. Rickard: A foreign letter has been returned to us from Lewisham-road. We will forward it on receiving another address—"Subscriber" (Liege): The matter shall be attended to—"J. L" (Brussels)—"J. D." (Salop)—"X. Y. Z." (Bonddu): The Rheidol Lead Mining Company is in existence, but no dividend has yet been paid.

THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, JUNE 3, 1876.

EMPLOYERS, AND COLLIERY RESPONSIBILITY.

The great importance of the Employers' Liability for Injury Bill to the colliery proprietors and manufacturing community of the whole United Kingdom, must be our apology, if any be needed, for again referring to the subject. Stripped of the verbiage which surrounded Mr. MACDONALD'S speech when moving this Compensation Bill, the measure aimed at making every colliery proprietor, manufacturer, and employer of labour responsible for any injury which should happen to any workman or person whilst in such employ. It was a bold and daring attempt, but Mr. MACDONALD'S zeal was equal to the emergency; and with an effrontery worthy a better cause he espoused the side of the working man as against employers with considerable vigour, with far more discretion than he is wont to display, but with such little legal skill and acumen that the thin gauze with which he sought to envelope his arguments was soon swept aside by the powerful rejoinders of the opponents of the measure, and the Bill met the fate which it richly deserved. Whatever merits or demerits the Conservative Government of Mr. DISRAELI may possess, no one can justly accuse it of being indifferent to the interests of the working men. Mainly through their instrumentality the present Government were placed in power, and many of their acts of the past two or three years show that they are most anxious to preserve such an important leverage as the votes of the working men at future hustings. If, therefore, the special Parliamentary advocate of the collier and working men could show that his clients had a grievance he at least had fair opportunity of giving vent to his views, assured that they would meet with favourable consideration at the hands of a Government so desirous of retaining the good wishes and hearty support of the working man.

Mr. MACDONALD made no attempt to disguise the fact that the object of his Bill and the whole tenor of his speech was to make the colliery proprietor responsible for every accident which should occur in his colliery, no matter by whom or how caused. One would imagine from the observations of Mr. MACDONALD that the colliery proprietors of this country are altogether indifferent to the interests of their men, and scarcely bestow a thought upon the safety and lives of those in their employ. Nobody knows better than Mr. MACDONALD that this is an aspersion on the character of gentlemen wholly undeserved. Mr. MACDONALD, with that boldness which characterises him, asserted that "every explosion in a mine is a crime," and evidently wished it to be inferred that the proprietor in whose colliery such explosion occurred should be considered the criminal, and not only criminally responsible to the law, but pecuniary responsible also to the relatives of deceased and injured workmen for the accident. But does not the practical knowledge which Mr. MACDONALD boasts as possessing teach him that there are accidents in mines that no human skill or foresight can possibly prevent? Have not some of the most fatally distressing mining casualties been caused by a workman suddenly tapping with his pick a long pent-up reservoir of explosive gas, or have not pits been suddenly flooded with water from a similar cause? To make proprietors responsible for any lives lost or injuries sustained under such circumstances would be simply preposterous, and the suggestion could only emanate from one whose advocacy of a cause was characterised by less judgment and discretion than practical commonsense. Every body knows that, irrespective of the anguish and distress caused by loss of life, a colliery accident is the proprietor's daily dread, and greatest evil to be guarded against. Thousands of pounds may be lost in a moment, whole operations suspended for months, or altogether abandoned, and the proprietor reduced from wealth and affluence to poverty. Every instinct of his Nature, therefore, urges the proprietor to adopt any and every known means, scientific and otherwise, to protect the lives of his men, and his own interest; and to make a proprietor responsible for injuries under these circumstances would be at once to strike at the very root and foundation of our national greatness, for few men would be found having the temerity to engage in colliery operations with such a millstone around their necks, and liable at any moment to such disastrous consequences. And carried to the issue which Mr. MACDONALD would desire, there would be an end of servitude even in private life, for few masters would be induced to be held liable to personal injuries brought about by thoughtless and negligent servants.

As pointed out by the Attorney-General, there are undoubtedly anomalies in the present law which need reforming, and we venture to say that none are more anxious for satisfactory amendment, and would lend more willing help in the solution, than the colliery proprietors, manufacturers, and others, against whom Mr. MACDONALD so ruthlessly levelled his shafts. It must not be forgotten also that in addition to the self-interest of colliery proprietors to prevent accidents, they and others engaged in dangerous operations are already subject to very strict legal supervision, and an infringement thereof renders them liable to serious consequences. The engagement of certified managers of the most skilful and best informed overmen, the erection of the most costly and reliable machinery are heartily welcomed by the colliery proprietor, and any modern appliance to render accident less frequent or probable, gladly appreciated. Nay more, the colliery proprietors would even condescend to receive any practical suggestion which Mr. MACDONALD could offer to prevent the sudden tapping into an old working, filled either with explosive gas or water, or to prevent the possibility of that recklessness on the part of ignorant working colliers which has too often result in a large sacrifice of human life. Until such remedy can be discovered the proposal of Mr. MACDONALD would be an undeserved and oppressive infliction upon colliery proprietors and all employers of labour, which could never be practically carried into operation. There were other points raised in the discussion on the Bill which our space this week will not allow us to touch upon. We can only hope that when Mr. MACDONALD next essays to espouse the cause of the working man as against employers he will be less reckless in his assertions, remembering that nothing carries so much weight as a plain ungarnished statement of facts couched in temperate language. We are glad the whole question has been relegated to a select committee, for it is high time the responsibility of employers should be decided once for all.

IRON TRADE PROSPECTS.

The important concern known as HOPKINS, GILKES, and Co. (Limited) has just issued a report in which the position of the iron trade is described as unprecedently bad. It could not well be otherwise, seeing that the American demand has been practically lost, while orders on home account present themselves in a sluggish, languid fashion, even although prices have fallen to a comparatively low ebb. Foreign competition is also an element which is not to be altogether overlooked. If prices have fallen to a low point in the British isles they are as low, and perhaps even still lower, in Belgium. We read of Luxembourg pig selling at the furnaces at 2*l.* 4s. per ton, while so pressed are some Belgian industrials for orders that a contract for 1100 tons of iron rails has been taken at 5*l.* 19s. 6d. per ton. Then, credit is sick all over Western Europe. None but the very soundest investments now stand the least chance of receiving attention at the hands of the investing public. A few years since investors were prepared to take the bonds of Peru, to buy Spanish bonds in the hope of obtaining from them somehow or other a clear 10 per cent. per annum, and to respond favourably to the continual appeals to credit made by Turkey and Egypt. A demand for our iron—and especially for our railway iron—was encouraged by this means in many parts of the world, and English ironmasters profited accordingly. But now all this is changed. The foreign bondholder has been terribly bitten; he has lost his dividends, his capital, and his temper. The bonds of Spain, Honduras, Venezuela, Turkey, Paraguay, and ever so many other States are practically regarded now as little more than waste paper; and the list of foreign defaulting Governments seems likely to be yet still further increased. In presence of such conditions as these, Turkey, Peru, and Egypt, and many other countries will, for, at any rate, some years to come, have to buy rails as best they may; we shall not loan them the capital with which to pay for them. The position of the home railway interest is also little favourable just now. Declining ordinary stock dividends are little calculated to encourage renewals or extensions upon a large scale. The credit of our great railway companies is, no doubt, still sound and good; still it seems clear enough that when ordinary stock dividends decline, the tendency of boards of directors is naturally to economise, and to avoid all heavy new commitments.

We will not pile up the agony any further, but we may now advantageously direct attention to one or two circumstances which appear to contain germs of hope and encouragement. The very difficulties, the very exhaustion, the very depression to which the iron trade has become a prey may be regarded as guarantees, to some extent, of future activity. They imply a return to lower prices, and lower prices have always hitherto induced a more or less animated demand for the products of our blast-furnaces and rolling mills. Then, labour and raw materials have been gradually falling in price; and if our iron masters will, as appears likely to be the case, have to sell more cheaply, they will also be able to produce more cheaply. This, we need scarcely say, is a matter of very great importance indeed. The working classes also give promise of increased docility as regards the future. They have learnt by bitter experience that Messrs. HALLIDAY and Co. are the veriest windbags, and that if they are to live in comfort they must labour faithfully for reasonable wages. Even, then, out of the present gloom some rays of hope may very possibly be evolved.

THE DRAINAGE OF SOUTH STAFFORDSHIRE.

Remembering what upon this subject we published a fortnight ago, our readers will not be greatly surprised that those mineowners in the Bilston district who desire that the work should not be continued have succeeded in getting a resolution to that effect passed at a meeting of their order. A meeting of those gentlemen was held at the offices of the Mines Drainage Commissioners on Tuesday afternoon, and it was presided over by the Chairman of the Commissioners, Mr. GEORGE J. BARKER. So far as the meeting showed, it was clear that the majority in numbers are decidedly adverse to the continued prosecution of the scheme, notwithstanding all that has hitherto been done. The majority, however—estimated by the amount of rate which they pay, and judged, likewise, by the attendance at the meeting—was in favour of the continuance of the drainage work. Early in the meeting it was seen that these two classes of colliery owners were at a divergence. The majority urged that proprietors of the soil had worked all that was valuable in the shallow mines, and had now under-let all the deeper mines, looking to the people who are working them to pay the cost of liberating the water. This was regarded by the other side as altogether imaginary. It was pointed out with much force that the opposition to the scheme was being led by mineowners whose property is in the crop, and who are at little trouble with the water which comes to them. This the owners referred to were not prepared to admit, holding, however, that these were not the times when people should be expected to still further burden themselves. They were not now, they said, able to get coal at a profit for the money they were compelled to accept for it, and things, in their view, could not be worse if the drainage of the mines by the Commissioners should be stopped. It was declared to be impossible to raise coal at a profit and pay a maximum rate of 6*d.* per ton.

Without pausing here to discuss whether or not the proprietors who are on the other side were right in declaring that no one can drain their mines in South Staffordshire at less than 6*d.* per ton, it is noteworthy that the colliery owners, who are in the majority in number, are alarmed not alone at the probability of the next rate being of that amount, but likewise at what seems to be foreshadowed if the work is to be done effectually. Not even a rate of 6*d.* can accomplish what is needed in the Bilston district. By a 3*d.* rate four pumping engines have been subsidised. That subsidy, so long as certain other pumps have been kept going, in great part at the cost of their proprietors, has kept the water from rising. Indeed in one pound it has been got down 12 ft. Now, however, the proprietors of the other pumps threaten to stop their engines. They cannot, they say, continue to do the work which they have been doing without help, and at the same time pay the rate. The cost to which these proprietors are put may be inferred from the figure quoted by one of them (Mr. JOHN SPARROW), who declared that his pump was costing him 80*l.* a-week. He could bear this when there were some profits to be got by mining and ironmaking, but now that there were no profits he could not bear it. Either he must be paid by the Commissioners or by neighbouring mineowners, or he must stop. In order to do what is necessary if these proprietors carry out their threats, some 26,000*l.* a-year will be required at the very lowest figure. Assuming that some 600,000 tons will be raised in the Bilston district in the ensuing year, a sixpenny rate, after the arbitrators have allowed deductions, would realise, it is estimated, only 12,000*l.* It will, therefore, be seen that the position at which the question has arrived is critical. Advantage was readily taken of this by the objectors to a rate, and they would have made short work of the whole affair. "If," said they "sixpence is not half enough, and a shilling cannot be got, the course is obvious. The work must be stopped. A new rate should not be levied."

Under these circumstances there seemed nothing for it but to endeavour to get the work done by all the people who are pumping, sharing with those who are working the four subsidised engines the 12,000*l.* A proposition to that effect was made, and it received the support of the most wealthy proprietors, without, however, much hope being held out that the terms would be accepted. The proposition did not meet the views of the majority, who found no difficulty in carrying a direct negative. As the matter now stands the colliery owners in the Bilston district of South Staffordshire recommend the Commissioners to abandon for a year the work of the underground drainage. Doubtless the owners who voted for this amendment are not the majority according to the Act, and if they were the Commissioners would not be obliged to be governed by their decision. But, as in the last article upon this question which appeared in the *Mining Journal*, it was explained the Commissioners would be compelled to act upon a petition for exemption sent to them from the Bilston or any other district if that petition were signed by a majority of rateable value. The colliery owners who carried the amendment of Tuesday, in Wolverhampton, assert that they are in the majority, not only as to numbers, but likewise as to value, and it is to be assumed that they will follow up what they did on Tuesday by presenting a petition asking for the exemption of their district. If their position be as strong as they allege, and they should take this course, then, Bilston having followed the example of Oldbury and cut itself off, there would be but little reason to expect that the Mines Drainage Scheme of South Staffordshire will be carried out to the end which is so greatly to be desired, and which at one time seemed certain, to the advantage of everyone. The feeling which would be evoked by such a result has not been overlooked by Mr. WOODHOUSE, one of the arbitrators, who was present at the Wolverhampton meeting. Mr. WOODHOUSE said that the announcement would cause amazement wherever mining is conducted, and so long as mining is practised.

MINERA.—The last two sales amounted to over 9000*l.*—in April 4777*l.*, and in May 4230*l.* The sales of ore in June, raised in May, will be about the same as the last, resulting in an increased dividend next August. Great improvements have taken place in the mine during the last few months. The new boring machines have worked most successfully, and there is every prospect of the returns increasing. When the market price of these shares was 28 to 30 the dividend was smaller than the one just declared. No wonder that the value of the mine should have more than trebled itself during the last seven or eight months.

MINING IN THE ST. BLAZEY DISTRICT.—With reference to the letter which appeared in the Supplement to last week's Journal from Mr. James Truscott and others objecting to the system of working pursued by Capt. Parkyn, we understand that the antagonistic opinions expressed are not justifiable, and that some of the best mining authorities, including Capt. Wm. Hancock, Capt. Pryor, and Capt. Harris, of Great Wheal Vor, agree that Capt. Parkyn worked the mine in a proper and judicious manner. The miners consider New East Fowey Consols a valuable sett, so also does Capt. Parkyn, and doubtless it would have proved so, but we believe limited capital interfered with its due development. All who know Capt. Parkyn would never think of doubting his ability to successfully carry on a mining undertaking of any magnitude, but it cannot be supposed that besides talent he is to find capital to work a property to support the miners employed, and to ultimately benefit supine shareholders.

WEST SWANSEA COLLIERY COMPANY.—Last week several of the shareholders and Mr. Warwick, the secretary, opened the new railway from the colliery to the main line of the Great Western Railway. Active work has now been renewed, and coal is already being sent into various manufactories round Swansea, and there is every reason to believe, now that the colliery has railway communication opened, a good trade will be done. Although the price of coal is lower than for many years, yet it is believed a fair profit will be obtained. In spite of great difficulties and delays, Mr. Warwick has at last succeeded in removing all obstacles, and through his perseverance the colliery has now a good railway and siding. The value of the colliery is, therefore, greatly increased.

A COLLIERY MANAGER FINED.—At the Bristol Police Court, on Tuesday, Mr. John Bennett, manager for and son of the proprietor of one of the largest collieries in the Bristol coal field, was fined in the mitigated penalty of 5*l.* and costs, for neglecting to provide sufficient ventilation in Dean Lane Coal Pit, in consequence of which a fatal explosion of fire-lamp took place. Defendant was liable to a penalty of 20*l.*, but the full amount was not pressed for.

COAL AND IRON IN THE UNITED STATES.—The aggregate quantity of anthracite coal mined in Pennsylvania to May 6 this year was 4,969,318 tons, as compared with 4,044,000 tons in the corresponding period of 1875. The aggregate quantity of bituminous coal mined in Pennsylvania to May 6 this year was 1,042,321 tons, against 977,735 tons in the corresponding period of 1875. The entire coal movement of the current Pennsylvanian coal year thus far has accordingly been 6,002,459 tons, against 5,021,735 tons in the corresponding period of 1875. The movement of coal over the Northern Central Railroad last year amounted to 1,077,121 tons, against 740,03 tons in 1874; the total deliveries to Baltimore last year were 57,35 tons, showing an increase of 61,217 tons as compared with 187. In the course of 1875 the Northern Central Railroad Company laid down 6623 tons of steel rails upon its system, the whole cost being charged to revenue. The sale is reported of 700 tons of Scotch pig upon the New York market. American rails are quoted at the works at $40 to $45 per ton currency; old rails have made $22½ to $25 per ton.

THE CHANNEL TUNNEL.—The preliminary works in connection with the Channel Tunnel have just commenced at Sangatte, near Calais. Shafts have already been sunk to a depth of 40 metres, and the work is being carried on rapidly, the labourers working day and night. A powerful pump has been set up to absorb the water that is met with in rather large quantities. When these shafts have reached a depth of 100 metres below the sea, a gallery 1 kilometre in length will be made in the hard chalk. If this can be done successfully, and nothing occurs to show that the works are impracticable, the tunnel will be definitely commenced.

FORMATION OF ANTHRACITE COAL.—A correspondent writes—The Supplement to the "Scientific American," No. 17, April 22, contains an article from the "Shenandoa Herald," giving an account of the formation of anthracite coal from apparently pure spring water in a pipe used for draining the Indian ridge shaft of the Philadelphia and Reading Coal and Iron Company. It appears this coal forms in about four months by exposure to the air, thus scattering to the winds all the geological theories that coal takes thousands of years and heavy pressure to form it. We recommend this discovery to the notice of the authors of "The Recent Origin of Man," and "Light as a Motive-Power."

MACHINE PUDDLING.—The improvement of Mr. A. Expessat, of Firminy, France, relate in the first place to mechanical puddling apparatus to be applied to ovens for smelting and refining metals generally, especially to puddling ovens and to furnaces for roasting ores; and, secondly, to the application of a blast of air to puddling, refining, and other furnaces, the air being heated by its passage in heated flues, the flues being either made in the oven where the blast is applied, or in flues independent of such oven.

ILLUMINATING GAS.—The invention of Messrs. CONNORTH and RATCLIFF, of Birmingham, consists in effecting the combustion of the coal in the retort by means of a jet of steam and air, or a jet of hot air. The heat for the decomposition of the coal is generated within the retort, the retort having a perforated false bottom on which the coal is supported, there being sufficient space between the false and true bottoms of the retort to permit of the supply passage of the combined steam and air into the retort. A pipe opens into the space described, and the top of the said pipe external to the retort is furnished with a steam jet delivering steam at high pressure. The steam jet carries with it a current of air drawn in at a

cross pipe on the main pipe. The combined jet of steam and air passes through the perforated false bottom into the ignited fuel on the said false bottom, and thereby maintains sufficient combustion in the lower part of the coal to effect the complete decomposition of the other portion of the coal, and thus to produce combustible gas.

REPORT FROM CORNWALL.

June 1.—Another step has this week been taken in the direction of introducing the boring machine into Cornwall. On Monday Mr. Basset convened a meeting at the Tehidy Office, Camborne, to consider an offer which had been made for the introduction of Major Beaumont's percussion drill, which is worked by the Diamond Rock Drill Company. The terms which the company propose are briefly these: That the mining company shall pay the out-of-pocket expenses for the carriage of machinery from the North of England, and the cost of erecting it at the mine, this outlay not to exceed 200*l.* As, however, this machinery includes engine, boiler, and compressor, this expense may be greatly reduced by the boiler and engine being supplied on the mine by the mining company itself. The Diamond Drill Company find the drills, tackle, explosives, and all things necessary for properly driving the level, and also place the debris into wagons, and deliver it at the pit bottom. The mining company will have the option of stopping the work at the end of two months from the date of commencement of driving in the event of 4½ yards per month not having been driven, or to have a similar option at the end of four months in the event of 6 yards per month not having been reached. Payments are to be made monthly, and the size of the level is to be not less than 6½ ft. high by 5 ft. wide. Going on the assumption that the speed by hand labour is 1½ fm. per month, and the cost 18*l.* per fm., the Diamond Company will charge the same sum per fathom for driving at the speed of 3 fms. per month, 23*l.* for 4½ fms., 27*l.* for 6 fms., and 30*l.* for 8 fms.

The proposal was discussed at considerable length, and, in fact, the whole question of boring by machinery was opened and dealt with in a thoroughly practical manner. Those who had had the greatest experience in such matters seemed to be of opinion that mechanical boring would ultimately be successful, although the success had been limited. It was admitted, however, that many improvements had been introduced since Mr. Dœring tried his machines at Tincroft and Dolcoath some eight years since. There are, of course, several important points to be considered. Thus, in pumping air for motive-power underground only about one-third of the power originally employed by the engine in compressing it can be utilised, and this is a source of considerable expense. On the other hand, by using compressed air the end is ventilated and cooled, and a very great compensating advantage is thus realised. There can be no doubt that one of the very worst uses to which a man can be put is that of setting him to beat a borer underground in a badly ventilated end, and sooner or later this kind of labour must be superseded. Mr. Basset well deserves the thanks of the county for interesting himself so much in mining matters. He is not only thoroughly in earnest, but has a remarkably exact idea of what is wanted, and how to do it; and great good must eventually result from the movement which he has initiated. The result of the meeting was that a committee was appointed to confer with Major Beaumont, in order to obtain more definite information as to the terms on which the Diamond drill could be obtained, and to make enquiries as to other drills, and report accordingly. The general committee consist of Messrs. G. L. Basset, Husband, W. Teague, J. Evans, J. Hocking, Letcher, Charles Thomas, Skewis, Tregay, J. Thomas, R. Pryor, J. Maynard, A. James, F. Michell, M. Loam, H. Lean, W. Rich, Richards, Wm. Teague, jun., Josiah Thomas, and Bilden. An executive committee was formed, consisting of Mr. Basset, Captains Teague, Josiah Thomas, and Messrs. Loam and Husband.

Before long we shall have Capt. Tregay's new borer out, and strong opinions are still expressed in favour of the Barrow borer.

The nearest point to Cornwall at which mechanical drills are now successfully working is the Severn Tunnel of the Great Western Railway, and Mr. Husband gave some interesting particulars of the work which was being done there in a drift under the proposed line of tunnel. This drift is 7 ft. by 7 ft., and they were now in 2100 ft. —using an air-pressure of 50 lbs. per square inch for the boring-machine. The air-compressor consisted of two vertical single-acting pumps—each 9-in. draw and 15-in. stroke—driven by an engine with 9-inch cylinder and 18-inch stroke; speed about 80 revolutions per minute. One pump would keep two rock-drills going full speed at about 600 strokes per minute, and at that speed they could each drill 1¼ hole 1 ft. deep per minute in hard grey punnent rock. They bored 12 to 14 holes in face of heading, each about 3 ft. deep, and charged and fired the same with about 8 lbs. of dynamite. The progress made is at the rate of about 7 yards per week, at a cost of 10*l.* to 12*l.* per yard, including everything.

The attention which is now being directed to the provision of improved stamps is likely to yield still earlier good results. If stamps were worked by water-power as formerly, no doubt the gravitation form is as good as any that can be devised; but when steam came into play, and "fire stamps" were introduced, the conditions were entirely altered. Three forms of improved stamps are now before the public—Willoughby's Elephant, Tholl's Pneumatic, and Husband's Pneumatic. Each of these is reported to be far in advance of what is now the old form, and a competitive trial has been suggested. Very extraordinary results have been attained by the stamps of Mr. Husband, which are now working at Great Wheal Vor, where in eight hours continuous working they stamped 17 tons 2 cwts. of hard lodestuff with 6 cwts. 2 qrs. of coals, while the large head stamped exactly half this quantity. No stamp work hitherto reported at all approaches this in performance and economy, and the results are said to be equally good when wear and tear are taken into account.

The annual exhibition of the Royal Cornwall Polytechnic Society is fixed to open on Sept. 5 (Tuesday), and continue during the week.

The resistance of the local shareholders in Wheal Wrey, Ludcott, and Trelawney, residing at Liskeard, to the action of the promoters and directors has so far been successful that they have obtained an order for the winding-up of the company in the Stannaries Court without anything in the shape of the substantial opposition anticipated being offered.

Reference has been made to the efforts of the Rev. C. M. E. Collins, for the establishment of potteries in Cornwall. That gentleman's paper, read at the recent meeting of the Royal Institution is by no means his first contribution to this subject, which he introduced to public notice many years ago. There are several potteries of various kinds in Devonshire in which the local clays are manipulated, and it is difficult to see why the pottery manufacture which did once exist in Cornwall cannot be resuscitated.

The recent North Frances meeting should certainly "point a moral," if it will not precisely adorn a tale. Adventurers should exercise a little more forebearance, and display a little more common sense. In all business matters confidence must be placed in those who have the management, and efficient management when obtained is well worth the keeping. A failure here is more serious than anywhere else, though its consequences may not be so immediately apparent, and if in mining matters there is a time when careful management is more needed than at any other time it is when circumstances are adverse, whereas that is just the time which a large section of adventurers choose for outcries against management, but there is necessary in a reduction dictated by a desire to reduce remuneration below its fair extent. Mr. Penrose had deserved better at the hands of the shareholders in North Frances. He had piloted them successfully through very critical periods, and he had, in conjunction with the agents, voluntarily consented to a reduction of his salary some time since. To attempt to cut down his salary still further was an unwise, indeed an unjust, step, and resignation was the only dignified course open to him. Now, when it is too late, the mistake is seen. How easy is it to be wise after the event.

SAFETY FUSE.—Referring to a paragraph which appeared in last week's Journal, to the effect that Messrs. Brunton and Co. had secured the only prize medal for fuses at the Chilian Exhibition, we are now desired to correct the above statement. The first-class medal and diploma for patent safety fuses were awarded by the commissioners to an assortment exhibited by Messrs. Bickford, Smith, and Co., of Cornwall and Lancashire, the original inventors and patentees.

HUSBAND'S PNEUMATIC STAMPS.—Mr. William Husband (Harvey and Co., Hayle) writes:—"In reference to statements with regard to the pneumatic stamps, made at Killifreth meeting, will you allow me to say that Captain Gough has reported as the result of experience at Great Wheal Vor that the heads stamped 6 tons in three hours with 190 lb. of coal, but that the fire at the end of the experiment was not so good as at the commencement, and that he considered an allowance of 1 cwt. of coal would quite cover the difference. The quantity, however, actually stamped was 6 tons 14 cwts., in rather less than three hours. The actual experience of more than two years at Crenver and Abraham is that 1200 to 1400 tons of tinstuff can be stamped with the destruction of about 1 ton of iron only. The total cost of masonry for three heads has not exceeded 150*l.*, including boiler-house, engine-house, and engine loading complete. It is found at Wheal Vor that the single-head battery will stamp 24 tons of ordinary lode stuff in 24 hours, without in any way forcing the working. Formerly with the old plan, stamps and heavy heads, it was necessary to employ from 24 to 30 such heads to do the same amount of work in the same time, the tinstuff being of about equal hardness in both instances. I am authorised to say that the agents of Great Wheal Vor will give every facility to persons interested in such matters who wish to see for themselves."—*West Briton.*

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

June 1.—The Iron Trade of South Staffordshire remains in a very languid and unsatisfactory condition, the depression being equally marked in the pig and the finished departments. Common unbranded bars are offering at 7*l.* per ton, and some few transactions have been reported even lower than that figure. Marked iron continues on the basis of 8*l.* 10s. to 9*l.* per ton for bars, and in the usual proportion to that rate for other descriptions. The mills and forges of the district are not in operation more than about half time. Pig-iron is in very limited request, even the local consumers obtaining their supplies from North Staffordshire, Derbyshire, and other outlying centres of production. Prices are without change, and although the yield is so greatly restricted stocks of some classes of pig-iron are increasing in the district.

The Coal Trade of South Staffordshire and East Worcestershire shows no improvement in the manufacturing department, and the demand for house coal has been somewhat checked by the genial summer weather of the past week. Prices are without change for best coal, but the inferior qualities are, if anything, somewhat easier.

At a large meeting at Wolverhampton of colliery proprietors interested in the Bilston district, under the South Staffordshire Mines Drainage Act, it was resolved by a majority of those present that no rate be levied for the next year. It was stated that in consequence of this vote a large number of collieries would be drowned out, and several hundred miners thrown idle.

In North Staffordshire a special meeting of the Coal and Iron Masters' Association was held a few days ago to consider the position and prospects of the trade. All present concurred in the opinion that, owing to the great depression existing, and the low prices prevailing, a general reduction in miners' wages must be made forthwith if the works are to go on. It was resolved that notice be given to the miners to terminate all contracts for wages and prices at the end of the fortnight. With regard to the amount of reduction, the general opinion was that the circumstances called for a reduction of at least 15 per cent. The opinion of the meeting was in favour of going to arbitration in case the workmen do not accept the proposed reduction. A considerable number of men are now out on strike against a reduction of 10 per cent. proposed by Messrs. Heath and Sons, and some others in the immediate locality. The smaller mills are doing a fair amount of work, but for large sizes manufacturers have the greatest difficulty in keeping their plant going at all. In South Yorkshire the miners' strike still continues, the men at many of the pits declining to go to work at the proposed reduction of 12½ per cent. Of course under these circumstances the men who have already gone in are more fully employed than they would be if the strike were over.

BLAKELY HALL COLLIERY.—On Wednesday this case came before the Lords Justices, having been previously part heard, and was by them directed to go again before the Master of the Rolls. Notice was accordingly given to all parties for a hearing yesterday, but owing to the pressure of business Mr. Chitty, Mr. Plant's leader, had only opportunity to mention the cause, which now stands over until the Court resumes after the Whitsun vacation. Mr. Plant is, it is understood, willing, as he ever has been, to settle all disputes, and render further litigation unnecessary; it is, therefore, entirely in the hands of the trustees and purchasers to determine whether or not an amicable arrangement shall be made. Until the case, of the merits of which nothing has yet been stated, has been fully heard in Court, the probable result cannot be predicted, but there appears to be no doubt that Mr. Plant runs the risk of being a considerable loser.

REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

June 1.—When the present stagnation which prevails among the staple trades is to come to an end is a problem which even the most acute would find it extremely difficult to work out. At the beginning of the year it was thought that things would change for the better; but no improvement came, and the predictions of those who waited for the opening of the northern ports to infuse fresh activity into the iron industry have proved equally fallacious. As a matter of fact, here we are at the beginning of June with trade as bad as ever, and no hopes of an immediate improvement; and to quote from the report from this district, presented to the National Union of Miners' Conference, at Manchester, trade is worse than at any period during the last 20 years. Clearances of iron continue up to recent averages, and that is saying all. Orders are still scarce, but the South American demand seems again to be looking up, and Sweden helps to a great extent in keeping the works going. Pigs do not sell nearly so freely as they did a few months ago. Tin-plates are a little higher in price, but business is still depressed. Large shipments of coal are being made, especially from the port of Cardiff. There is no doubt, however, that just now the output is more the demand warrants. Prices for steam qualities continue extremely low; and house coals are only a moderate sale, and the local consumption (owing to the warmer weather) has fallen off considerably. The clearances of patent fuel from Swansea are limited.

The following resolution of the Conciliation Board has been passed in reference to the wages of the hauliers employed in various collieries of the district. The men asked for more pay, and in several instances the board has been appealed to:—"The joint committee (says the resolution) having for some months past very fully discussed from time to time, at the request of the workmen's representatives, the question of the claim of the hauliers for additional wages, unanimously agree that in respect of such disputed claims the coalowners in the Association are found to have strictly carried out the award in fixing the hauliers' wages in the several groups. The workmen's representatives continue to press for a concession to the hauliers; but the owners' representatives, while desirous of meeting the matter as fairly as possible, do not feel justified in varying the terms of the award in any particular; and they, therefore, are obliged to decline to entertain the hauliers' application for an advance in their wages."

Mr. G. Nurse, of Pen-y-Van, near Pontymister, has patented an improved means and apparatus for finishing tin and terne plates. This consists in arranging ordinary tinned or terne plates in a revolving frame or rack within a vessel in which is enclosed a bottom coil of piping, and also a wall of pipe or pipings through which hot water, steam, or other agent of heat is passed. A screen is so arranged as to permit the superfluous tin or terne to fall and flow towards an outlet to be removed when desired. Mr. Nurse has also invented a method of preparing metal (black) plates to be coated with tin or lead, and in apparatus to be used therewith or therefor. This consists in placing black plates in a bath in series that can be removed into a second bath, and from that to a third or drying chamber, this treatment being carried on after the plates have been annealed. The plates are afterwards white pickled in a similar manner.

A fund is being raised on behalf of the sufferers by the Cymmer explosion. By-the bye, I see that the matter has been brought under the notice of the House of Commons by Mr. Macdonald, M.P., who asked whether the Home Secretary had noticed by the report of the coroner's inquest that there were 150 lbs. of dynamite in the man-hole of the tunnel when the explosion took place; whether he had observed that naked lights were used where the parties in charge were handling the dynamite, and other questions. He also enquired whether, if it is not already provided for by Act of Parliament, the Home Secretary will bring in a bill to prevent the use of naked lights where dynamite is stored underground, and provide, in such bill, against the storing of such quantities, and also against its being prepared for use where stored? The Home Secretary, in reply, said the Government Inspector, who was directed to hold a special enquiry, had not yet made his report. He (the Home Secretary) suspected that the work in this instance was carried on under an unexpired license granted under an old Act of Parliament; and, in conclusion, expressed his opinion that the Explosives Substances Act of last year was sufficient to meet the case.

A warning to persons who may be inclined to intimidate workmen has been administered to one Robert Kainsford, who was guilty of that offence towards a man employed at Panteg Steel Works. The Pontypool magistrates fined him 5*l.*; and four other men, for inciting Kainsford to commit the offence, were mulcted in a smaller amount.

Messrs. Fothergill and Hankey's affairs have again been before the law courts. This time the Lords Justices of Appeal discharged an order which Mr. Registrar Brougham had made in favour of a claim by Mr. Edward Cory, a London metal-broker, to stand in the place of the holders of certain bills he had assigned.

Mr. H. T. Taylor, for many years the respected manager of the Neath Abbey Works, has opened an establishment to be called the "Vale of Neath Engineering Works," in a locality adjoining the town of Neath.

In the Queen's Bench on Monday the case of Blizard *v.* Ynisceedwyn Iron and Coal Company was heard. The dispute was as to an alleged contract on the part of defendants' agent to supply coals upon certain terms. Defendants repudiated the contract, and denied that the agent referred to was their agent. A verdict was returned for the defendants.

A general delegate meeting of colliers will be held on the 12th inst. at Merthyr, when the election of five representatives on the workmen's side of the Conciliation Board will be proceeded with. The question also of publishing, and, if decided upon, by what means can the money be obtained, for printing the shorthand notes of the Conciliation Board's proceedings.

The adjourned inquest on the four men killed at the furnace explosion at Dowlais was closed this week. The jury returned an open verdict. Curiously enough, a few days ago one of the largest boilers owned by the Dowlais Iron Company burst while in full blast. One man only, as it happened, was at work near, and he was not seriously injured.

THE SCOTCH MINING SHARE MARKET—WEEKLY REPORT AND LIST OF PRICES.

During the past week the settlement intervening has again restricted business; prices have generally declined. In shares of iron and coal concerns Omoa and Cleland have declined ⅜, but Arniston and Scottish Australian are each ⅛ up. Bilson and Crump, 4 to 6. Bolckow, Vaughan, and Co. (Limited) is increasing its capital just now 240 000*l.*, by issuing 12,000 20*l.* 5 per cent. preference shares, having no right of voting, and ranking *pari passu* with the 8000 similar shares already issued: A shares, 51; B, 38 to 38½. Brynmawr, 8, sellers. Cairntable, 8¼, sellers. Cardiff and Swansea, 2 to 2¼. Crown Preserve, 1, 2¼ to 2¾. Chapel House, 3 to 3½. Great Western, 8 to 10. Marbella, ⅜ down at 2¾, sellers. Mwyndy, 1¾ to 2¼. Newport Abercarn, 1¼ to 2¾. Powells Llantwit, ⅛ to ¼. Richards and Co., 3 dis., buyers. Spon Lane, ⅛ dis., sellers. South Wales, 7 to 9. In shares of foreign copper concerns—Cape, 1; Thirds, 3-16ths; ditto (7*l.* paid), ¼; and Canadian Pyrites, 1-16th—all lower per share. Yorke Peninsula (ordinary) rather better on the annual report. Bensberg Lead, 2 to 2⅛; Rio Tinto Five per Cent. Mortgage Bonds, 53, buyers; and San Pedro, 1½ to 1⅝. In home mines there has not been much doing. Aberdunant, 13s. to 14s. Bumpfylde, 18s. 6d., sellers. Belford United, 17s. Cargoll, 4½. Carn Brea, 37 to 38. Dolcoath, 36 to 37. Dunsley Wheal Phœnix, 1s. 6d. East Van, 1⅝ to 10⅝. Frank Mills, ⅛, buyers. Gawton, ⅜ to ⅝. Glenroy, 7¾. Glyn, 3 to 3¼. Great Vor, ¾, buyers. Great West Van, ⅝, sellers. Hingston Down, ⅜ to ½. Killifreth, 16s. to 19s. Ladywell, 1½ to 1⅝. Llanrwst, 1½ to 1¾. Marke Valley, 2 to 2¼. New Pembroke, ¼ to ⅜. North Lisxey, ⅞ to 1⅛. Old Treburgett, ⅜. Parys Mountain, 17s. 6d. to 18s. 6d. Pennerley, 2 1 16th to 2 3 16ths. Pen-trufal, 12s. to 14s. Points of Wales, 1s. to 2s. St. Patrick, 1½, sellers. South Crofty, 15 to 17. Tankerville, 10⅝, sellers. Van, 37 to 39. Van Consols, 1⅞ to 2⅛. West Assheton, 1¾ to 2. West Maria, ⅛, sellers. West Tankervile, 1¾ to 2; preference (3*l.* paid), 2⅛, buyers. West Tolgus, 63. Wheal Crebor, 2 to 2¼. Wheal Agar, 2½ to 3. Wheal Kitty (St. Agnes), 2¾ to 2⅞. Glasgow Caradon, 27s. 9d., and Gunnislake (Clitters), 2 to 3, are unaltered. Duchy Great Consols offer at 5. In shares of gold and silver mines, Richmonds are ½ lower, though the run is cabled 840,000. Flagstaff also 7 16ths down, and Emma 4s. Birdseye Creek, 1 11-16ths, sellers. Cedar Creek, ½ to ⅝. Colorado Terrible Lode, 1¼. Chontales, 7s. 6d. to 8s. 6d. Eberhardt and Aurora, 7½ to 8. Frontino and Bolivia, 2 5 16ths, buyers. Javali, 6s. 3d., buyers. New Zealand Kapanga, ⅛ to 1. Pestarena United, 6s. to 7s. Rio, 2s. Port Phillip, ⅛ to ⅜. Santa Barbara, 1½. South Aurora, 8s. to 10s. Sweetland Creek, 1½ to 2. Tecoma, ⅛ to ¾. In shares of oil companies, Dalmeny have changed hands at a decline of 3s., while Young's Paraffin have advanced ⅛. At the meeting of the Uphall Company, yesterday, the report, recommending a dividend of 2½ per cent. per annum, was adopted, and this dividend declared. It will be observed that for the two last half-years no dividend was paid on these shares, so the recovery in the oil trade is now beginning to affect all these companies favourably. In shares of miscellaneous companies, London and Glasgow Engineering, &c., have been done at a reduction of 1, but Scottish Wagon, both classes, are in demand at last price, and held for an advance. Chemical shares quite neglected. Langdales at 5. Lawes at 7¼; ditto, preference 7 per cent., at par. Price's Candle, ¼ lower at 11½. Details of the several days' business follow:—

On THURSDAY last next to nothing doing. Arniston done at 6¼. Bedford United, ⅜, sellers. Carn Brea, 40 to 42. Chapel House, 2⅞ to 3½. Dalmeny Oil, 100s. to 103s. Ebbw Vale, 10½ to 10¾. Flagstaff, 2½, buyers. Frontino and Bolivia, 2 5-16ths, buyers. Hingston Down, ⅛, sellers. Lochore and Capledrae, 7 to 7¼. Marbella, 2½, sellers. Old Treburgett, 8s., sellers. Port Phillip and Colonial, ¼ to ⅜. West Tankerville, 1⅞ to 2⅛. Young's Paraffin, 8¼ to 9¼. Scottish Wagon, 10¼ to 10¾; new shares, 4⅛ to 4¼.

On FRIDAY more business doing. Cargoll about 5. Carn Brea done 40½. Chapel House, 2⅞ to 3. Chontales 7s. 6d. to 8s. 6d. Dalmeny Oil done at 5. Emma done at 20s., closing 19s. to 20s. Javali, 6s. 3d., buyers. Lochore and Capledrae done at 7. Marbella, 2½, sellers. Omoa and Cleland offered at 43s. Parys Mountain, 18s. 3d., sellers. Richmond done at 7 15-16ths and 8, closing 7¾ to 8. Tankerville 10⅜ to 10⅝. Tharsis done at 19 11-16ths and 19¾, closing 19 11-16ths to 19 13 16ths. West Tankerville, 2, sellers; preference, 1⅞, buyers. Yorke Peninsula (ordinary), 6s. 6d. to 7s. 6d. Young's Paraffin done at 9¼, closing 9 3-16ths to 9¾. Scottish Wagon done at 10¾.

On SATURDAY (being contango day) market, as usual, idle. Cargoll, 4½ to 5. Cedar Creek, ½ to ⅝. Chapel House, 2⅞, buyers. Emma, ⅞ to 1⅛. Flagstaff, 2¼, sellers. Glenroy, 7, sellers. London and Glasgow Engineering Company shares done at 19. Marbella 2½, sellers. Omoa and Cleland, 43s., sellers. Parys Mountain, 17s. 6d. to 18s. 6d. Pestarena United, 7s., sellers. Prince of Wales, 1s. to 2s. Richmond, 7⅞ to 8. Tankerville, 10½, sellers. Tharsis done at 19⅝, closing 19⅝ to 19 11-16ths. West Tankerville, 2, sellers; preference, 2 1-16th buyers. Yorke Peninsula (ordinary) done at 7s. Young's Paraffin done at 9¼, closing 9⅛ to 9⅜. Scottish Wagon, 4⅛ to 4⅛. The following were the rates of continuation current to day:—Contagos: ¾d. on Canadian Copper Pyrites; ¼d. on ditto (3*l.* paid); 1d. on Emma; 1d. on Glasgow Caradon; 2d on Port Washington; 1d. on Huntington; 2d. on Marbella; 1¼d. on Omoa and Cleland; 3d. on Tharsis (7*l.* paid); 4½d. on Young's Paraffin.—Even: Richmonds. Backwardations: 5s. on Shotts Iron; 6d., 3d. on Tharsis (10*l.* paid). The making up prices fixed to-day for the following shares show the alterations noted when compared with those for the last occasion. Richmond, Young's Paraffin, each ¾, and Tharsis (7*l.* paid) ⅛ all higher. Canadian Copper Pyrites (3*l.* paid), Glasgow Caradon (new), Huntington, Marbella, Rio Tinto, Shotts, and Tharsis (10*l.* paid), all no change. Omoa and Cleland, 12s; Emma, Glasgow Port Washington each 8s; Canadian Copper Pyrites 3s. 9d., Monkland 3s., and Glasgow Caradon 2s. 3d., all lower.

On MONDAY the new account opened for settlement, June 15. Monday, June 12, will be contango day; more business done. Birdseye Creek, 1 11-16ths, sellers. Cairntable, 9, sellers. Canadian Copper Pyrites, 10s 6d., sellers. Cargoll, 5, sellers. Chapel House, 3, buyers. Chontailes, 7s. 6d. to 8s. 6d. Emma done at 20s. Glenroy, 7¼, sellers. Old Treburgett, ⅜, sellers. Omoa and Cleland, 1¼ to 1¾. Parys Mountain, 17s. 6d. to 18s. Richmond, 7½ to 8. South Aurora, 8s., buyers. Tankerville done at 10½, cash. Tecoma, ⅜, buyers. Tharsis done at 19½ and 19 9-16ths, closing 19⅜ to 19⅝; new shares done at 13¼, closing 13¼ to 13½. Van Consols, 1¾, buyers. West Assheton, 1⅞, sellers. West Tankerville, 1⅞ to 2; preference, 2, buyers. Wheal Crebor, 2 to 2¼. Young's Paraffin done at 9¼, closing 9⅛ to 9¼. Scottish Wagon, 10½ to 11.

On TUESDAY little business doing. Aberdunant, 14s., sellers. Canadian Copper Pyrites, 10s., sellers. Cargoll, 4⅝, sellers. Cedar Creek, ½, buyers. Chapel House, 3, buyers. Dunsley Wheal Phœnix done at 1s. 6d. Omoa and Cleland done at 42s. Parys Mountain declined, at 15s. to 17s., closing unaltered at ⅞, buyers. Pennerley, 2 1-16th, buyers. Richmond done at 7½, closing 7⅝ to 7¾. Tankerville, 10⅝. Tecoma, ⅛, buyers. Tharsis done at 19½, closing 19⅛ to 19¼. Young's Paraffin, 9¼ to 9⅜. Scottish Wagon, 10½ to 11; new shares done at 4⅛ to 4¼.

On WEDNESDAY market neglected. Aberdunant, 13s. to 14s. Arniston, 6⅞ to 7¼. Chapel House, 3 to 3½. Eberhardt and Aurora, 7½ to 8. Llanrwst, 1½ to 1¾. Marke Valley, 2 to 2¼. Parys Mountain, 17s. 6d. to 18s. 6d. Richards and Co., 3 dis., buyers. Richmond, 7½ to 8. Scottish Australian, 1 7-16ths to 1 11-16ths. Tankerville, 10⅝ sellers. Tharsis done at 19½, closing 19⅜ to 19¼. Yorke Peninsula (ordinary), 6s. to 7s. Young's Paraffin done at 9¼, closing 9⅛ to 9 5 16ths. West Tankerville, 1¾ to 2. Scottish Wagon, 10½ to 11; new shares, 4⅛ to 4¼.

YORKE PENINSULA MINING COMPANY (Limited).—The report by the directors of this company for the annual general meeting on the 8th inst. has been issued, with accounts to Dec. 31 last. A copious review of the operations, &c., during the year is given, with sketches of the various shafts and levels and other matters of interest. The whole reads well, and the directors express their conviction that at no time during the existence of the company were the prospects of the success, for which they have so long worked, greater than at present, as the development of the Kurilla Mine into a permanently valuable property appears now to be only a question of time and money. Between April, 1875, and March, 1876, 591 tons of ore sold has realised net 4285*l.* 5s. 5d., and besides that about 1500*l.* more were at grass up to March 24 last, on which date it should be noted Capt. Anthony said in his report, "In future the sales will be more

regular, and will considerably increase." The ore ground discovered, as shown in one of the sketches, would seem fully to warrant this.

Subjoined are this week's quotations, &c., of mining and metal shares quoted on the Scotch Stock Exchanges:—

Capital. Per share.	Paid up.	Dividends. Rate per cent. per annum. Previous.	Last.	Description of shares.	Last price.
				COAL, IRON, STEEL.	
£10	£6	£10	£ 8½	Arniston Coal (Limited)	6⅞
10	10	14	9	Benhar Coal (Limited)	10 1-16
10	7	14	9	Ditto	7
100	40	12½	7½†	Bolckow, Vaughan, and Co. (Lim.)....A.	51
10	10	10	10	Cairntable Gas Coal (Limited)	9
10	10	5	nil	Chillington Iron (Limited)	3⅞
32	29	7	½†	Ebbw Vale Steel, Iron, and Coal (Lim.)..	10⅜
10	5	nil	nil	Fife Coal (Limited)	3½
10	10	—	—	Glasgow Port Washington Iron & Coal (L)	2
10	10	—	—	Ditto Prepaid	2
10	10	—	—	Lochore and Capledrae (Limited)	7
10	10	5	nil	Marbella Iron Ore (Limited)	2⅜
10	10	5	nil	Monkland Iron and Coal (Limited)	1¾
10	10	7	7	Ditto Guaranteed Preference	4¼
100	100	nil	nil	Nant-y-Glo & Blaina Ironworks pref. (L)	30
6	5	15	nil	Omoa and Cleland Iron and Coal (Lim.).	29s.
1	1	12½	15	Scottish Australian Mining (Limited)	1⅝
1	£8.	12½	15	Ditto New	8s. 6d.
50	50	10	5	Shotts Iron	58
10	10	10	5	Ditto New, issued at 2½ prem.	10
				COPPER, SULPHUR, TIN.	
4	4	—	—	Canadian Copper Pyrites (Limited)	¼
4	3	—	—	Ditto (£3 paid)	¼
10	7	20s‖	20s‖	Cape Copper (Limited)	39
2	2	—	—	Dunsley Wheal Phœnix Tin (Limited)...	1s. 6d.
1	1	12½	15	Glasgow Caradon Copper Mining (Lim.).	27s. 9d.
1	15s.	12½	15	Ditto New	20s.
10	9	—	5	Huntington Copper and Sulphur (Lim.).	8s.
25s.	23s.	—	—	Kapunda Mining (Limited)	2d.
4	4	—	—	Paulicillo Copper (Limited)	2
10	10	6†	6†	Rio Tinto (Limited)	5¼
20	20	—	—	Ditto, 7 per cent. Mortgage Bonds ..	14
100	100	—	—	Do., 5 p. ct. Mor. Deb. (Sp.Con. Bds.)	53
10	10	nil	nil	Russian Copper (Limited)	2¼
10	10	25	25	Tharsis Copper and Sulphur (Limited)...	19½
10	7	25	25	Ditto New	13½
1	1	—	—	Yorke Peninsula Mining (Limited)	7s.
1	1	—	—	Ditto, 15 per cent. Guaranteed Pref..	⅞
				GOLD, SILVER.	
1	1	5	5	Australian Mines Investment (Limited).	8s. 9d.
20	20	—	—	Emma Silver Mining (Limited)	1
10	10	—	—	Flagstaff Silver Mining (Limited)	2
5	5	—	—	Last Chance Silver Mining (Limited) ...	⅛
5	5	—	35	Richmond Mining (Limited)	7½
				OIL.	
10	7	2½	5	Dalmeny Oil (Limited)	5
10	10	—	—	Uphall Mineral Oil (Limited)	5¼
10	8½	5	5	Young's Paraffin Light & Mineral Oil (L)	9¼
				MISCELLANEOUS.	
50	25	16	16	London and Glasgow Engineering & Iron Shipbuilding (Limited)	19
20	14½	—	—	Peruvian Nitrate (Limited)	13
10	10	8	5	Scottish Wagon (Limited)	10¼
10	4	8	5	Ditto New	4⅞

† Interim. ‖ Per share.

Last day for this account June 12; settling day, June 15.

NOTE.—The above lists of mines and auxiliary associations is as full as can be ascertained, Scotch companies only being inserted, or those in which Scotch investors are interested. In the event of any being omitted, and parties desiring a quotation for them and such information as can be ascertained from time to time to be inserted in these lists, they will be good enough to communicate the name of the company, with any other particulars as full as possible.

J. GRANT MACLEAN, Stock and Share Broker.

Post Office Buildings, Stirling, June 1.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

June 1.—During the past week there has been an increased output of coal in the Chesterfield and neighbouring districts, but the men have not as yet settled down to the condition they were in before the strike. At Pilsley there has been some interruption to work, but not of a serious nature. The business doing in house coal to the Metropolis has improved, but it is far below what it was a few weeks ago, whilst prices are low. The North Country coal has been pushed most actively in the London market, whilst the collieries in North Derbyshire and South Yorkshire have been standing, whilst what are termed the best Wallsends are sold nearly as low as Silkstones, the difference between the two not so long since being something like 3s. per ton. Trade in inland coal consequently is not likely to be as good as it has been, and when all the pits are once more going there is not likely to be much more than half-time for the miners. The iron trade remains without any material change, and is by no means brisk, taken altogether some of the foundries are favourably off for orders.

In Sheffield some branches are very quiet, and the men only partially employed. This is more especially the case with respect to some descriptions of cutlery. The Bessemer works appear to be doing tolerably well, especially in rails. Cammell and Co. (Limited) have been going on steadily, although the Oaks Colliery, belonging to the company, is standing. As much fuel, however, as is required is being obtained from Staffordshire. Now that so many collieries are at work to the south of the town there is no dearth of manufacturing coal. The strike in South Yorkshire has undergone no marked change of late, but a great deal of privation still prevails, as the Association has been unable to provide the strike-money to which the members are entitled, and for which they have been paying for many years. The youngest of them continue to visit the villages and towns harnessed with ropes to wagons, into which they put provisions, which so far have been liberally contributed. Sacks of flour, sugar, butter, sheep, joints, and beer, as well as wearing apparel, have been given to them. In one instance, on Tuesday, the miners at a colliery close to Masbro' which has been working for some time, gave the men on strike a wagon load of bread. Many of the publicans have also furnished them with bread and soup. It may be said that the only difference between the masters and men is 2½ per cent. The Iron Trade of South Yorkshire keeps up very well, all things considered. The foundries in particular are doing a good business. Some large orders are in hand for air-compressing machinery and steam pipes, as well as boilers. Specialities, such as patent pistons and slide valves, are in good request. The miners in West Yorkshire, who have been working very well owing to the dispute in the southern part of the West Riding, have received notice that they will have to submit to a reduction, but no step will be taken until the strike in the Barnsley and Sheffield district is settled, and the terms on which it has been settled declared.

CAUTION TO MINERS.—Thomas Hill, a miner employed at Morley Main Colliery, was on Monday, at the Dewsbury Police Court, convicted for not extinguishing his safety-lamp while working in the mine, although he knew that through an accident the gauze had got a hole in it. The magistrates fined him 20s. and costs.

IRONWORKS, AND THE CONSUMPTION OF SMOKE.—At the Leeds Police Court, on Tuesday, Mr. Andrew Firth, of the Leeds Ironworks, Kidacre-street, was summoned for having ten furnaces not so constructed as to consume their own smoke. The Town Clerk, who prosecuted, explained that these proceedings were taken under the 70th section of the Leeds Improvement Act, 1866. There were, however, exceptional cases in which the Act should not apply. Subsection C of that clause provided that it should not be applicable as regarded the smelting of iron ores, or the refining, puddling, shingling, or rolling of iron or other metals, unless it was proved to the satisfaction of the Justices that means for consuming the smoke had been successfully applied in similar processes, and were in actual operation, &c. His contention against that section was that it was intended to apply to the furnaces in use at the time the Act was passed. In this case it was admitted that the furnaces were used entirely for the purposes of generating steam used for power. After that was admitted, it was said "Yes, it is true that it is used for power, but then the manufacture is such that we require the power to be very much stronger at one time than another, and if we clog our furnaces with a smoke-consuming apparatus the process of manufacture will be interfered with." He would, therefore, direct his evidence to controvert that proposition by showing that by various well-known apparatus other than that used by the defendant the smoke was consumed without being too expensive or being detrimental to the manufacture.—Mr. John Kirby, general manager and engineer at the works of Messrs. James Kitson and Company, said he was acquainted with the plan in operation at defendants' works for letting air into furnaces by slits in the door, but he did not think it was an effective method of consuming the smoke. There were several apparatus, such as Duke's, Gill's, Kirby's (his own), which answered the purpose better.—The Town Clerk: Do you use Kirby's at Messrs. Kitson's?—Witness: Yes.—The Town Clerk: Would you make more smoke with mere slits in the doors than you do with your apparatus.—Witness: Yes, we should; a great deal more. I have tried both ways.—The Town Clerk: I believe in ironworks it is necessary to have a greater pressure of steam at one time than at another?—Witness: Yes.—The Town Clerk: Could you with with your apparatus get up as much steam as quickly as you could with slits in the door?—Witness: In my opinion, from practical experiment, you could get more. The cost of fitting his apparatus to a furnace was about 10*l*. In answer to Mr. Ferns, who appeared for the defendant, witness said that if there were 14 furnaces connected with a large chimney it would assist the ventilation of the fires.—Councillor Gascoigne entirely agreed with the evidence of Mr. Kirby. He did not consider slits in the furnace door at all suitable as a means of consuming smoke. He had examined the furnaces at defendant's works, and there everything was favourable to perfect combustion, except a proper smoke consuming apparatus.—For the defence, Mr. Ferns called Mr. Denison and Mr. J. Johnson, engineers, who said that the means used by the defendant were amply sufficient to consume the smoke.—Mr. Denison said he had used a similar apparatus for 14 years.—Mr. Fawcett, the defendant's engineer, was then examined, and in answer to Mr. Bruce, he admitted that since the summons in this case was taken out the holes in the furnace doors had been enlarged.—Mr. Bruce said that, after that, it was impossible not to convict. It was a great pity that ironmasters in the town did not put their heads together and try as much as possible to consume the smoke. There was more smoke caused by the ironworks than by anything else. There were, no doubt, difficulties in connection with such works, but ironmasters would really be great public benefactors if they would do more than they had hitherto done to consume the smoke. It was really "peddling" with the smoke question to go against the cloth manufacturers and others, and until the ironmasters showed a disposition to help in the matter the nuisance could not be satisfactorily remedied. He did not mean these remarks as disrespectful to the defendant, for the firm was a well-known and highly respectable one. A penalty of 40s. and costs was inflicted.—Mr. Ferns said that several of the ironmasters, notably at Monkbridge Ironworks, to get rid of the smoke were using gas.

THE IRON INDUSTRIES OF GLOUCESTERSHIRE, FOREST OF DEAN.

By RICHARD MEADE, Assistant Keeper of Mining Records, Museum of Practical Geology.

Previous notices of this district and Somersetshire included an account of the Forest of Dean coal field; the production of its collieries, and distribution of its coal by railway and canal, distinguishing the exports coastwise from that exported to foreign countries. The deposits of iron ore occurring and worked in both counties, with returns of production from the earliest period, details of individual mines, and general distribution of the Forest of Dean hematite and Brendon Hills spathic ores, following with analyses of both varieties. This was succeeded by an historical sketch of the pig-iron industries of Dean Forest, which have existed from an early period; the remaining points to consider bearing upon the iron industries of Gloucestershire and Somersetshire, and which will form the subject of the present notice, will be an account of the early malleable iron works of these districts, including mills and forges, tin-plate works, a general reference for some years to the quantities of ore raised on the eastern and western side of Dean Forest, succeeding with details of quantities of hematite ore, the production of the Forest mines, retained for smelting in the furnaces of the district, and of fuel employed in its reduction and the manufacture of tin plate.

MALLEABLE IRON WORKS, MILLS, AND FORGES.—The early history of the iron trade is more or less historically identified with the early records of the Forest of Dean. We have it on the authority of the Domesday Book that bolts and bars of iron required by King Edward's shipbuilders were obtained from the city of Gloucester, which from its close proximity to the Forest of Dean reasonably induces to the inference that they were produced there. Again, according to Scrivenor, in his History of the Iron Trade, it appears probable that shortly after the Emperor Adrian visited this country (A.D. 120), accompanied by the sixth legion of Roman soldiers, a great military forge—Fabrica—was by his direction established at Bath, for the purpose of manufacturing war implements for the various troops in Britain, and for some bodies of Roman soldiers on the Continent. This branch of manufacture, of considerable importance at that time, and the regulations for the management of the Fabrica, or College of Armourers, were most systematic and complete. The iron used for the manufacture of the military weapons at this establishment is supposed to have been obtained from the Forest of Dean and the hills of Monmouthshire, where the ore was dug up and smelted, the iron taken across the Severn at Lydney, landed at Aust, and taken to Bath by a military way almost parallel with the Upper Bristol Road.

Slags and cinders occur in various places in the Forest of Dean and in the Brendon Hills, in which pottery and Roman coins have been discovered, tending to establish the fact of the existence at an early period of ironworks and foundries, in which charcoal had alone been employed. It also appears that at an early period the monks of Flaxley, located in the Forest of Dean, established forges in various places where wood, iron ore, and water were abundant, power being secured for the primitive mechanical appliances then in use, by the flowing streams in the sites selected. More recently, in the beginning of the present century, the principal works existing were situated at Froombridge, in the parish of Frampton, where iron and brass wire was made, and at Framilode, in the parish of Eastington, a manufactory of tin-plate was in operation. Again, at Flaxley and at Lydney works of an extensive character are known to have been in existence both for the reduction of the ores of the district and the manufacture of malleable iron, the first-named of the above works having then, as now, the reputation of making iron of a character known as "red short," especially celebrated and in great request for the manufacture of tin-plate. The works at present and for many years in operation in the Forest of Dean are those at Park End, belonging to the Forest of Dean Iron Company, and consisting of three puddling furnaces and two rolling mills, while in Somersetshire the Ashton Vale Works, situated near Bristol, and belonging to Mr. Joseph Tinn, consists of ten puddling-furnaces and three rolling mills. In the year 1874 the number of works in operation in Great Britain was 298; these according to published returns show an aggregate of 6803 puddling furnaces and 866 rolling mills.

TIN-PLATE MANUFACTURE.—The works engaged in this industry are those of the Forest of Dean Iron Company, situated at Parkend, the Lydney Works of Messrs. Allaway and Sons, and the Lydbrook Works of Messrs. Richard Thomas and Co., situated near Ross, while at Lydbrook and Cinderford mills are in operation engaged in the manufacture of wire. The art of tinning was practised in Bohemia in the beginning of the 17th century, it is said about the year 1620; some years later the art was introduced into the kingdom of Saxony. The first works established in Great Britain appear to have been erected at Pontypool, in Monmouthshire, about the year 1720. It was not, however, until the year 1728 that any considerable advance was made, when Mr. John Payne invented a process for rolling iron; this was further supplemented by the grooved mills, invented about the year 1783 by Mr. Henry Cort. Many years, however, passed away before Cort's invention was fully appreciated. Mr. Reynolds, of the Ketley Ironworks, in Shropshire, erected the first of Cort's rolls, and in 1790 Mr. Richard Crawshay erected rolling mills at Cyfarthfa, in Glamorganshire.

The selection of iron for the making of the various description of tin-plate is of the utmost importance, the great tests of quality being ductility, strength, and a peculiar crystalline structure and grain, well known to the tin-plate maker. The greatest care is taken to reject any plate at all faulty after it has passed through the various processes necessary in its preparation for tinning. This faulty condition is observed in the passage of the plate through the chilled rolls, after being freed from rust or scale of oxide of iron formed in the previous operations through which the plates pass, in heating and re-heating in the furnace, and cleansing in the acid bath.

The estimated capacity of production of the tin-plate works of this district is equal to 3700 boxes per week, or an annual make of 185,000 boxes. The actual production in the year 1873 did not, however, exceed 132,000 boxes, of a total weight of 7160 tons, the make in the year 1874 giving a diminished production. The total manufacture of tin-plate in the year 1873 was 2,635,045 boxes, the number of works and firms employed in its production being 68. In the year 1874 the same works produced a total of 2,529,563 boxes, the falling off, compared with the year 1873, being due to the fact that some 30 works were laid off during a period of three months through a strike on the part of the men, who eventually resumed work at the old rate of wages. The tin-plate industry is just now in a most depressed condition. Recently the trade met, and the manufacturers determined to restrict the make, resolving to stop their works one week in four until a better state of trade sets in; and during the past month it was further determined at the quarterly meeting, held at Gloucester, that should this depression continue, and the restriction of the make prove insufficient, the works would be stopped two weeks in each month.

The Trade and Navigation returns for the year 1875 show a considerable increase in the quantities exported compared with the two previous years. The following statement will show the quantities of tin-plate exported, and the principal countries receiving the same in each of the years:—

Countries to which sent.	1873.		1874.		1875.
France	3,983	Tons	2,333	Tons	1,859
United States	85,527		91,407		95,595
British North America	3,338		3,512		4,158
Australia	4,526		2,594		3,192
Other countries	23,264		23,114		22,049
Total	120,638		122,960		126,561
Total value	£3,953,042		£3,711,819		£3,691,582

An analysis of the foregoing quantities and values shows considerable variation. Thus in the year 1873 the average value per ton of tin-plate exported was 32*l*. 16s. 3d., compared with 30*l*. 4s. 2d. in the year 1874, receding to 29*l*. 13s. in the year 1875, or a diminution in value of the exported quantities in the year 1875, compared with the year 1873, of no less than 6*l*. 3s. 3d. per ton.

Of the exported quantities in each of the above-mentioned years there were shipped from the port of Bristol 110,471 boxes of terne, and block plates in the year 1875, compared with 63,392 boxes in the year 1874, and of 41,117 boxes in the year 1873. The returns of the first quarter of the year 1876 does not present so favourable an aspect, the falling off in our exports of tin-plate, when compared with the same quarter of the year 1875, amounting to upwards of 16 per cent.

The following abstract presents the details of our exports of tin-plate for the first quarter ending March of each of the years 1874, 1875, and 1876:—

Countries.	Quarter ending March 1874.		1875.		1876.
France	814	Tons	660	Tons	1,600
United States	27,806		29,744		21,743
British North America	242		386		533
Australia	1,079		709		1,029
Other countries	4,924		5,853		6,154
Total	34,872		37,242		30,060

An examination of the above returns indicates a diminution in our exports to the United States of nearly 28 per cent., compared with the exports of the corresponding quarter of the year 1875.

In the process of tinning some years since 13 lbs. of metallic tin was required in the annealing of a box of tin-plates; at the present time the quantity used does not exceed 9 lbs. per box for charcoal plates, and 8 lbs. per box for coke plates, and when it is remembered that the price of metallic tin in the year 1873 was 133*l*. 7s. per ton, and in the year 1874, 108*l*. 8s. per ton (English blocks), it will be seen how important it is that the operation of tinning should be skilfully effected. The standard for quotation in reference to tin-plates is always taken, I.C. (common No. 1); this is a box containing 225 plates, 13¾ in. by 10 in., the weight of which is taken as 1 cwt. of 112 lbs. The fluctuations in price to which metallic tin in common with other metals has been subject to of late will be seen by the average prices of this important metal in each of the following years:—

Year.	Price per ton.	Year.	Price per ton.
1863	£117 0 0	1869	£123 2 0
1864	107 1 0	1870	127 5 6
1865	96 5 0	1871	127 10 0
1866	88 12 6	1872	132 15 0
1867	91 17 3	1873	133 7 0
1868	98 0 0	1874	108 8 0

[*To be continued in next week's Mining Journal.*]

INSTITUTION OF CIVIL ENGINEERS.—The President's usual annual *conversazione* was, by permission of the Lord President of the Council, held on Thursday in the South Kensington Museum. Selections of music were played by two military bands, and refreshments were provided for those who chose to partake of them, but no new objects had been introduced into the Museum, and engineering novelties, which rendered former gatherings attractive, were entirely absent. The attendance was very large, and many engineering and other celebrities were among the guests.

MANUFACTURE OF ARSENIC.—The improvements in the manufacture of arsenious acid and metallic arsenic consist in the use, conjointly, of a siliceous material and a deoxidising agent, for the purpose of extracting arsenic and arsenious acid from the arsenical by-product obtained in the preparation of colouring materials by the action of arsenic on aniline or other similar substances, either with or without previous calcination of such bi-product.

TOOLS FOR CUTTING STONE, COAL, &C.—In carrying out the invention of Mr. BAIN MUNRO, of Forfar, the holder is formed with a conical recess or socket on its face, and a hole is bored through from the bottom of the conical recess to the back of the holder. The cutter is in the form of a hollow or solid cone or conical frustrum, and is formed with a nipple or button on a short shank at the small end, which button is adapted to engage in a kind of internally grooved cup formed in the end of a holding spindle, which is entered through the hole in the holder. The cup end of the holding spindle is slit diametrically, so that the two halves can spring a little to or from each other, and when the button of the cutter is forced in it opens the halves, and they then close on it.

WANTED, a thoroughly practical and energetic Man, as GENERAL MANAGER OF MINES AND IRONWORKS in STAFFS. Should understand Mining, and must be well up in Smelting Ores by the Spanish Furnace Process, and know the details of Forge and Mill Work. To a good man this will prove an important appointment. The climate is very mild, and there is a manager's house furnished.
Application, by letter, to Mr. WILLIAM GIBBS, Metal Broker, Wolverhampton; or to Mr. SAMUEL DANKS, Engineer, Hadley Park, Salop.

WANTED, an EXPERIENCED and PRACTICAL LEAD MINING AGENT, who thoroughly understands PUMPING and WINDING MACHINERY, and SURVEYING in all its branches. References to be given, testimonials furnished, and state salary expected.
Address, "Box, No. 55," Post Office, Newcastle on Tyne.

WANTED, a THOROUGHLY EXPERIENCED MINING CAPTAIN to SUPERINTEND LEAD MINES.
Apply in the first place by letter, stating particulars of experience, salary required, and references, which must be first-class, to THOMAS HUGHES, 39, Seel-street, Liverpool.

WANTED, a SECOND-HAND SET of 9-inch PUMPS, 20 fms. in length, in good working order.
Offers, stating lowest price delivered at Aberystwith Station, Wales, to be addressed to Messrs. RIDLEY, BLACK, and Co., Tyne Chambers, 24, Side, Newcastle on Tyne.

WANTED, a HORIZONTAL or BEAM CONDENSING PUMPING ENGINE, complete, new, or second hand if in good condition; 36 in., 40 in., or 45 in. cylinder. Engineers' and makers' names to be given, number of years in use (if second hand); full particulars as to condition, lowest price, and place of delivery.
Address, HENRY WOOLCOCK, C.E., Whitehaven.

FOR SALE, BY PRIVATE CONTRACT, ONE 22 in. cylinder WINDING ENGINE and CASE, with BOILER of 8 tons, on WHEAL MARY ANN MINE.
For particulars and price, apply to the Purser, W. G. NETTLE, Liskeard.
March 20, 1876.

MR. W. TREGELLAS, 122, BISHOPSGATE STREET WITHIN, E.C.,
Deals in all descriptions of Stocks and Shares at close market prices.

MR. E. PERCY ROBERTS,
FINANCIAL AGENT,
60, ENGLISH STREET, CARLISLE.

CAPTAIN ABSALOM FRANCIS
MINING AGENT, ENGINEER, AND SURVEYOR
COGINAN, ABERYSTWITH.

In the High Court of Justice—Chancery Division.

IN THE MATTER OF THE COMPANIES ACTS, 1862 AND 1867,
AND
IN THE MATTER OF THE COAL CONSUMERS' ASSOCIATION (LIMITED).

THE CREDITORS of the ABOVE-NAMED COMPANY are required, on or before the 1st day of July, 1876, to SEND THEIR NAMES AND ADDRESSES, and the PARTICULARS OF THEIR DEBTS OR CLAIMS, and the NAMES AND ADDRESSES OF THEIR SOLICITORS (if any) to ARTHUR COOPER, of No. 14, George-street, in the City of London, the Official Liquidator of the said Company, and if so required by notice in writing from the said Official Liquidator, are, by their solicitors, to COME IN and PROVE THEIR SAID DEBTS or CLAIMS, at the Chambers of the Vice-Chancellor Sir RICHARD MALINS, at No. 3, Stone Buildings, Lincoln's Inn, in the County of Middlesex, at such time as shall be specified in such notice, or, in default thereof, they will be EXCLUDED FROM THE BENEFIT OF ANY DISTRIBUTION made before such debts are proved. Thursday, the 13th day of July, 1876, at Twelve o'clock at noon, at the said Chambers, is the time appointed for adjudicating on the debts and claims.

ALFRED RAWLINSON, Chief Clerk.

HARRISON, BEAL, AND HARRISON, 19, Bedford-row, W.C. (Solicitors for the Official Liquidator.)

Dated this 18th day of May, 1876.

MANGANESE AND SULPHUR ORES.

MESSRS. BROWN, BUTLER, AND CO., MINERAL MERCHANTS, AGENTS, AND BROKERS, are OPEN to TREAT for the PURCHASE of LARGE QUANTITIES of the above or other MINERALS, to be delivered in Liverpool. Particulars, naming quality and price, will receive immediate attention.
Address, Brockley Buildings, 51, South John street, Liverpool.

SILVER-LEAD MINE.

TO FINANCIERS AND SPECULATORS.

FROM £2000 to £4000 are REQUIRED to DEVELOPE a MINING PROPERTY, which at the depth attained has proved unusually rich for Silver Lead.
To inspect, and for full particulars, address "X.," MINING JOURNAL Office, 26, Fleet street, London.

TO MINING COMPANIES, AND OTHERS.

THE ENGLISH THARSIS is a Maiden Mine, situate in SOUTH WALES, at a point where the geological formations give promise of great mineral wealth, within half a mile of a railway station, and about eight hours journey from London.
A specimen of the ore found has been pronounced on analysis by a well-known mineralogist to contain 53 parts of sulphur and 46 parts of iron.
For further particulars as to terms of working, &c., apply to Messrs. LEATHES and MAYNARD, 3, Langham-place, Portland-place, London, solicitors.

A CAPITAL OPPORTUNITY FOR INVESTORS.

A MERCHANT in the City, a Shareholder in the TALLYBONT SILVER LEAD MINING COMPANY (LIMITED)—a most promising mining company, the shares of which, like the East Vans, may any day go at a tremendous premium (see report in *Mining Journal*)—being in want of £300 to £400, is compelled to SELL some of his shares at a small reduction (they are £1 shares).
Application to "Toidac," care of Messrs. Deacon, 154, Leadenhall street, E.C.

MANX SILVER-LEAD MINERAL COMPANY (LIMITED).

In consequence of the recent valuable discoveries, and the large number of applications for shares, the SHARE LIST in this promising Mine will be CLOSED JUNE 30th, 1876.
W. A. HOLLOWAY, Managing Director, Douglas, Isle of Man.
GEO. W. HUGHES, Secretary, 4, Cable-street, Liverpool.
N.B.—No smaller number than twenty-five can be allotted.

ROMAN GRAVELS MINING COMPANY (LIMITED).

Notice is hereby given, that the Directors have, this day, DECLARED a DIVIDEND of £510, free of Income tax, being EIGHT SHILLINGS AND SIXPENCE PER SHARE on the 12,000 shares of the company, PAYABLE on and after the 20th June next to the shareholders on the books of the company on the 9th June, and that the Transfer-books will be closed from the said 6th to the 20th June, both days inclusive.
By order of the Board,
F. F. WILSON, Secretary.
20, St. Helen's place, London, E.C., May 30th, 1876.

PONTGIBAUD SILVER-LEAD MINING AND SMELTING COMPANY.

Notice is hereby given, that "A COMPTE" or INSTALMENT of TWENTY FRANCS PER SHARE, on account of the Dividend for the 1875-1876, is to be PAID on the 5th day of June next. This "a compte" will be paid at the office of the company, No. 15, Rue de Châteaudun, Paris, or at the London Agency, No. 6, Queen-street-place, on presentation of the share certificates with the fifteenth dividend coupon not detached, which will be stamped. The payments in England will, according for exchange, be at the rate of 15s. 10d. per coupon, less income tax.
JOHN TAYLOR AND SONS.
London Agency, No. 6, Queen-street place, E.C., May 29, 1876.

NOUVELLE MONTAGNE COMPANY

The DIVIDEND for the year 1875 will be PAYABLE:—
1.—On 30th June next, FIFTY FRANCS PER WHOLE SHARE in exchange for coupon No. 22, and TEN FRANCS PER FIFTH OF SHARE, coupon No. 39.
2.—On 31st December next, SEVENTY FIVE FRANCS PER WHOLE SHARE in exchange for coupon No. 23, and FIFTEEN FRANCS PER FIFTH OF SHARE, coupon No. 40.
The coupons for encashment to be presented to Messrs. C. DEVAUX and Co., 9, King William street, E.C., London.
LE DIRECTEUR GENERAL DE LA SOCIETE,
V. BOUHY.
Paris, 1st May, 1876.

THE ALMADA AND TIRITO CONSOLIDATED SILVER MINING COMPANY (LIMITED).

Notice is hereby given, that the TWELFTH HALF-YEARLY GENERAL MEETING of the above company will be HELD at 47, Finsbury Circus, London, on FRIDAY, the 16th day of June, 1876, at Twelve o'clock precisely, for the purpose of receiving reports from the directors and manager, and transacting the general business of the company. The Register of Transfers will be closed from the 2nd of June instant to the 16th June, both inclusive.
By order of the Board, H. G. DENNISS, Secretary.
47, Finsbury Circus, E.C., 1st June, 1876.

FRONTINO AND BOLIVIA (SOUTH AMERICAN) GOLD MINING COMPANY (LIMITED).

Notice is hereby given, that the next HALF-YEARLY MEETING of the shareholders of this company will be HELD at the City Terminus Hotel, Cannon-street, in the City of London, on TUESDAY, the 13th day of June, 1876, at Two o'clock precisely, for the following purposes:—
To receive the report of the directors and the audited statement of accounts of the company for the half-year ending the 31st December, 1875.
To elect directors.
To elect an auditor; and for other business, including the declaration of a dividend.
By order of the Board, J. JAMESON TRURAN, Secretary.
Gresham House, Old Broad-street, London, E.C., 29th May, 1876.

THE YORKE PENINSULA MINING COMPANY (LIMITED).

Notice is hereby given, that the ANNUAL GENERAL MEETING of the shareholders of the Yorke Peninsula Mining Company (Limited) will be HELD at the City Terminus Hotel, Cannon-street, London, on THURSDAY, the 8th of June next, at Three o'clock in the afternoon precisely, for the purpose of transacting the following business.
The Share Transfer books will be closed from Wednesday, the 31st of May, until Thursday, the 8th of June next, both days inclusive.
By order of the Directors,
C. GRAINGER, Secretary.
The King's Arms-yard, Moorgate-street, London, 30th May, 1876.

GLASGOW AND THE HIGHLANDS.

ROYAL ROUTE, VIA CRINAN AND CALEDONIAN CANALS, by Royal Mail Steamer, IONA, from GLASGOW, daily at Seven A.M., and GREENOCK at Nine A.M., conveying passengers for the NORTH and WEST HIGHLANDS.
Bill, with Map and Tourist Fares, free, at Messrs. CHATTO and WINDUS, Publishers, 74, Piccadilly, London; or by post from DAVID HUTCHESON and Co., 9, Hope street, Glasgow.

NICKEL AND COBALT REFINING, AND GERMAN SILVER WORKS, 16, OOZELL STREET NORTH, BIRMINGHAM.

STEPHEN BARKER begs to inform the Trade that he has the following articles for sale:—
REFINED METALLIC NICKEL.
REFINED METALLIC BISMUTH.
OXIDE OF COBALT.
GERMAN SILVER—IN INGOTS, SHEET, WIRE, &c.
NICKEL AND COBALT ORES PURCHASED.

GOLDENHILL COBALT, NICKEL, COLOUR, BORAX, AND CHEMICAL WORKS,
NEAR STOKE-UPON-TRENT, STAFFORDSHIRE
JOHN HENSHALL WILLIAMSON, MANUFACTURER AND REFINER,
Purchaser of Borate of Lime and Tincal.

MR. W. F. STANLEY, MATHEMATICAL INSTRUMENT MANUFACTURER TO H.M.'S GOVERNMENT, COUNCIL OF INDIA, SCIENCE AND ART DEPARTMENT, ADMIRALTY, &c.
MATHEMATICAL, DRAWING, and SURVEYING INSTRUMENTS of every description, of the highest quality and finish, at the most moderate prices.
Price-list post free.
ENGINE DIVIDER TO THE TRADE.
ADDRESS—GREAT TURNSTILE, HOLBORN, LONDON, W.C.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACTS, 1862 and 1867, and of the WHEAL WREY, LUDCOTT, AND NORTH TRELAWNY MINING COMPANY (LIMITED).—The Vice-Warden has by an Order, made in the said Matter, bearing date this day, APPOINTED JOHN HENRY HAMLEY, of Truro, within the said Stannaries, an Officer of the said Court, to be ABSOLUTELY THE OFFICIAL LIQUIDATOR OF THE SAID COMPANY.
FREDERICK MARSHALL, Registrar.
Dated Registrar's Office, Truro, 26th May, 1876.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACTS, 1862 and 1867, and of the WHEAL WREY, LUDCOTT, AND NORTH TRELAWNY MINING COMPANY (LIMITED).—Notice is hereby given, that ALL CREDITORS of the ABOVE NAMED COMPANY are required, on or before the 10th day of June next, to SEND IN THEIR NAMES AND ADDRESSES, and the AMOUNTS AND PARTICULARS OF THEIR SEVERAL CLAIMS, to Mr. JOHN HENRY HAMLEY, the Official Liquidator of the said Company, at the Stannaries' Court Office, in Truro. FREDERICK MARSHALL, Registrar.
Dated Registrar's Office, Truro, 26th May, 1876.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACTS, 1862 and 1867, and of the WHEAL WREY, LUDCOTT, AND NORTH TRELAWNY MINING COMPANY (LIMITED).—By an Order, made by His Honor the Vice-Warden of the Stannaries, in the above Matter, dated this day, on the Petition of Thomas White, John Dunstan, John Ainge, Michael Williams Bawden, Lewis Ough, Matthew Daniel, John Hodge, James Henry Alger, James Venning, and Thomas Broad, all of Liskeard, within the said Stannaries, and being respectively Contributories of the said company, IT WAS ORDERED that the said WHEAL WREY, LUDCOTT, AND NORTH TRELAWNY MINING COMPANY (LIMITED), BE WOUND-UP by this Court under the provisions of the Companies Acts, 1862 and 1867.
J. G. CHILCOTT, Truro
(Solicitor for the said Petitioners).
Dated Truro, the 26th day of May, 1876.

IMPORTANT SALE OF A GOING CONCERN.

PEDN-AN-DREA UNITED MINES.

MR. A. BERRYMAN is instructed by the Committee of Management TO SELL, BY AUCTION, on the Mines, at Redruth, Cornwall, on Friday, the 23rd June instant, at Twelve for One o'clock, the UNEXPIRED TERMS of the LEASES of the above-named valuable TIN MINES, together with the PLANT, MACHINERY, and EFFECTS, as a GOING CONCERN. The plant includes—
ONE 70-in. PUMPING ENGINE, and four boilers.
ONE 22-in. horizontal WHIM ENGINE, two boilers, and cage.
ONE 12 in. ENGINE and STONE BREAKER.
ONE 32-in. STAMPING ENGINE, and three boilers, and 48 heads of stamps, axles, &c.; one portable engine; one old boiler; about 250 fms. wire ropes, pulleys, stands, &c.; about 2 fms. whim chain; about 150 fms. of pumps and pitwork; launders, &c.; skips, wagons, and miners', smiths', and carpenters' tools, &c.
There are on the mine—Sheds over stone breaker and dressing floors, carpenters' shop, smiths' shop, sampling house, tin dressing house, arsenic and dressing house, saw house and pit, substantial account house.
The mine is in full working order, and has made very large returns of tin. The monthly sales at present are about 20 tons of tin.
A full inventory may be seen, and particulars of leases and conditions of sale obtained on application to Mr. A. BERRYMAN, Auctioneer, Penzance; Captain TREGAY, on the Mines, Redruth, Cornwall; or at the offices of the company.
8, Austinfriars, London.

IN LIQUIDATION.

CLYNE AND LOWER RESOLVEN COLLIERIES, NEATH, GLAMORGANSHIRE.

MESSRS. FULLER, HORSEY, SON, AND CO. are instructed by the Liquidator of the Welsh Steam Coal Collieries Company (Limited) to SELL, BY AUCTION, on the Premises, Clyne and Lower Resolven Collieries, near Neath, on Tuesday, June 27th and following day, at Twelve o'clock precisely, in lots, the nearly new

FIXED PLANT AND MACHINERY,

LOOSE TOOLS, UTENSILS, and STORES, including a new 400-horse power high and low pressure STEAM ENGINE (see following advertisement); two pairs high pressure WINDING ENGINES, by Galloway and Fletcher and Sons, with cylinders 18 and 12 diameter; a high pressure horizontal PUMPING ENGINE, with 24 in. cylinder; two horizontal and vertical ENGINES; beam STEAM ENGINE, with 20 in. cylinder; five Galloway's patent BOILERS, nearly new, 6 ft. 6 in. diameter, 26 ft. long; three STEAM BOILERS; powerful capstan drum, equal to 40 tons; capstan; seven winding drums; rope pulleys and frames; ventilating fan; donkey pump; hydraulic pump, by Hathorn Davis and Co.; Niagara and universal steam pumps, by Hayward Tyler and Co.; five double purchase crabs; a nearly new 14 horse power double cylinder portable ENGINE, by Clayton and Shuttleworth; cast iron mortar mill, with 7 ft. pan; circular saw bench; 20 tons mining gear; 48 tons new cast iron pipes; 128 tons cast iron pipes and fittings; 12 tons cast iron water pipes; 35 new permanent way rails, with points and crossings; 104 tons tram rails; 6240 timber sleepers; a 20 ton railway wagon weighbridge, Hind's patent, by Kitchen; 12 tons New Staffordshire plate and bar iron; 4 tons steel wire rope; 1100 yards iron ditto; 2 tons chain; rotary coal screens; Tangye's 20 ton hydraulic jack; 7 tons wrought and cast scrap; 97 coal trams; smiths' and engineers' tools; 2 sets of Whitworth's screwing tackle; about 100 loads useful timber, deals and battens; 13,000 fire bricks; 2 useful horses, carts, harness; quantity of stores; 340 tons small coal; office fixtures, and numerous other effects.
There are sidings to both collieries from the Vale of Neath Railway, so that goods can be easily loaded into trucks.
May be viewed Saturday and Monday preceding, and mornings of sale, and catalogues had of HENRY WILSON, Esq., the Liquidator, Bartholomew House, Bartholomew-lane, E.C.; of Messrs. MILLER and MILLER, Solicitors, 5 and 6, Sherborne-lane, E.C.; at the Castle Hotel, Neath; at the Collieries; and of Messrs. FULLER, HORSEY, SON, and Co., 11, Billiter-square, London, E.C.

IN LIQUIDATION.

CLYNE AND LOWER RESOLVEN COLLIERIES, NEATH.

MESSRS. FULLER, HORSEY, SON, AND CO. will INCLUDE in their SALE on Tuesday, June 27, a new 400-horse power differential, expansive, direct horizontal, compound, high and low pressure PUMPING ENGINE, by Hathorn, Davis, Campbell, and Davey (Davey's patent), with cylinders steam jacketed, 34 in. and 64 in. diameter, 7 ft. 6 in. stroke.
May be viewed, and further detailed particulars contained in catalogues, which may be had as in preceding advertisement.

SPELTER WORKS.

TO BE SOLD, the LEASE and PLANT of the UPPER WORKS, BAGILLT, FLINTSHIRE, extending over about TWENTY-SEVEN ACRES of LAND; also about FOUR AND A QUARTER ACRES of FREEHOLD LAND, and one undivided third part or interest in the DEE BANK WHARF, adjoining the said freehold.
The plant is at present sufficient for the production of 30 tons of spelter per week and may easily be increased (the greater part of the land being let off for farming); there are extensive buildings for storing blende, and heated rooms for making and storing retorts.
The works are now in operation, and with a production of only about 11 tons of spelter per week considerable profit has been realised during the last two years. There are several collieries in operation in the immediate neighbourhood, and the works are within easy reach of the North Wales blende-producing mines.
The freehold land above mentioned almost adjoins the leasehold property, and is bounded on three sides by a large colliery, the Dee Bank Wharf named above, and the River Dee respectively. It is traversed by the Chester and Holyhead Railway, and situated within a few hundred yards of the Bagillt Railway Station. The site is, therefore, an unusually favourable one for the erection of works.
Apply to H. C. CARVER, Llanidloes, Montgomeryshire.

TO CAPITALISTS OR PROMOTERS DESIRING TO MAKE MONEY.

TO BE SOLD, a COLLIERY ROYALTY in NORTH WALES, close to rail or shipping port; several shafts partially sunk; coal fully proved of FOUR SEAMS of good HOUSE and STEAM COALS, in an area of upwards of 400 acres of surface. It adjoins the West Mostyn Coal Field, just successfully launched, where under seams (including Cannel) have been proved in addition to the above; so that eminent engineers state that the available coal in this royalty may be 88 feet thick.
Present holder will arrange to sell the entire to an individual or company for what it has cost him, dividing all profit made above, which, even in a normal state of the coal trade, must be large. Certain and safe surveys by eminent Staffordshire and Welsh engineers have already been made.
Address, "Nil Desperandum," care of Mr. Watson, 15, Fenwick-street, Liverpool,

LEAD MINE NEAR CARSPHAIRN, STEWARTRY OF KIRKCUDBRIGHT.

TO BE LET, with immediate entry, and for such number of years as may be agreed upon, the

WOODHEAD LEAD MINE,

On the Craigengillan Estate, situated in the parish of Carsphairn and Stewartry of Kirkcudbright.
This mine was opened in 1838, has been wrought ever since, and has yielded a large quantity of lead of the finest quality. The plant, machinery, &c., can be had at a valuation.
JAMES M'CALL, at the Mine, will show the underground workings, as also the plans and sections; and for further particulars application may be made to ALEXANDER M'CUBBIN, Solicitor, Ayr; or to Mr. THOS. SMITH, Land Steward, Berbeth Mains, Dalmellington, Ayrshire.
Ayr, May, 1876.

SULPHATE OF BARYTES FOR SALE.—Fine powdered, beautifully white; also in the Rock or Crude State, free from Lime and Metallic Oxide.
Samples on application to—
RUTHWAITE BARYTES MINING COMPANY,
Nov. 17, 1875. WHITEHAVEN.

IN VOLUNTARY LIQUIDATION UNDER THE COMPANIES ACT, 1862.

THE NEW LLANGYNOG LEAD MINING COMPANY (LIMITED).

TO BE SOLD, BY PRIVATE TREATY, ALL the BENEFICIAL INTEREST of the New Llangynog Lead Mining Company (Limited) in the LLANGYNOG LEAD MINES, comprising all the valuable, productive, and extensive mines, veins, beds of lead, ores of lead, and other metals and minerals known collectively as the Llangynog Lead Mines, and in the reservoir, water-supply rights, easements, and interests thereto belonging, situate in the several parishes of Llangynog, Llanrhaiadr-yn-Mochnant, Hirnant, and Pennant, in the county of Montgomery; and also the WHOLE of the movable PLANT and MACHINERY of the said company.
The Llangynog Lead Mines have been a highly productive and dividend-paying property.
The mines, machinery, and plant are in working order, and considerable quantities of ore are now being raised.
The works may be inspected at any time upon application to the Manager at the Mines. The leases and agreements may be inspected at the offices of Messrs. LONGUEVILLE, JONES, and WILLIAMS.
All further information may be obtained, and maps of the property inspected on application to Messrs. GEO. HASWELL and SONS, 84, Foregate-street, Chester to HENRY DENNIS, Esq., Mining Engineer, Hafod-y-Bwch, Ruabon; or to Messrs LONGUEVILLE, JONES, and WILLIAMS, Solicitors, Oswestry.

FOREST OF DEAN.

VALUABLE IRON MINES FOR SALE.—Some opened and in good working order, others partially developed.
TWO LARGE COLLIERIES FOR SALE.
Reliable information upon Forest of Dean Investments.
WM. HENDERSON, Mining Engineer, Newnham.

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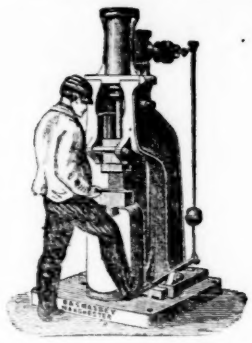

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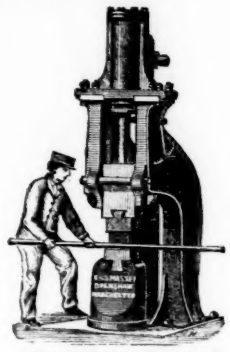

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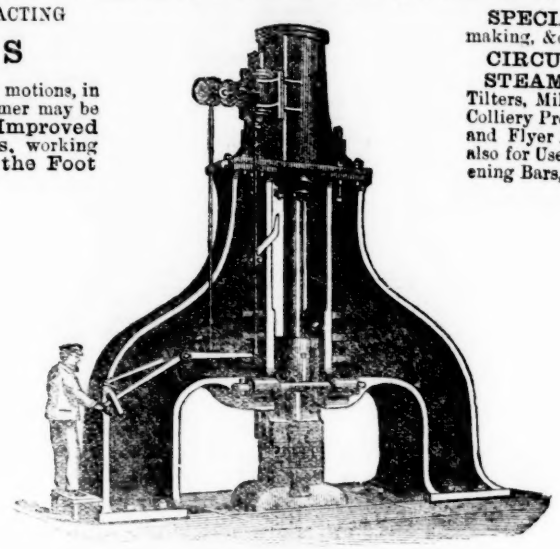

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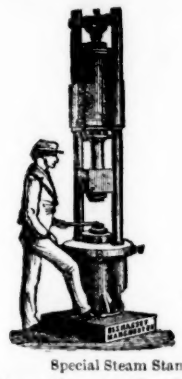

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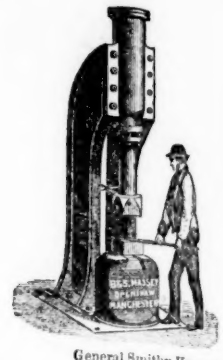

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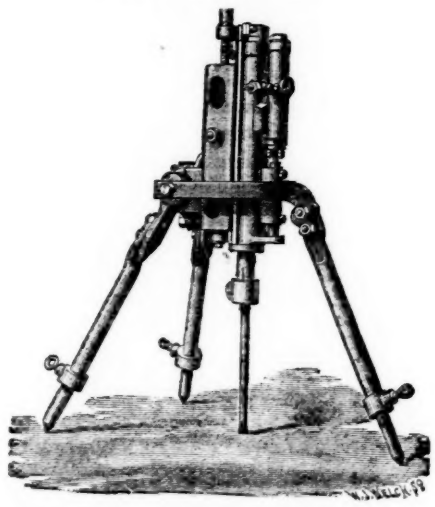

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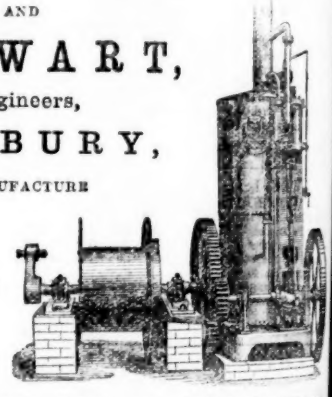

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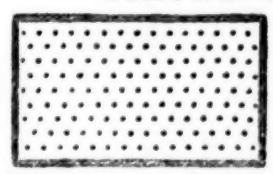

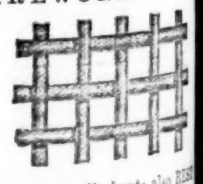

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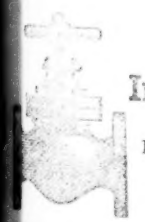

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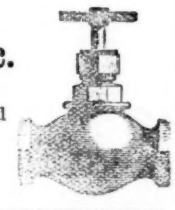

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THE MINING SHARE LIST.

BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last wk.	Clos. Pr.	Total divs.	Per share.	Last paid
[illegible]	Alderley Edge, c, Cheshire*	10 0 0	—		12 11 8	0 5 0	Jan. 1876
1000	Balmynheer, t, Wendron (4000 to is.)	1 0 0	—		0 2 0	0 2 0	Nov. 1875
30000	Bampfylde, c, i, mn., Devon*	1 0 0	1½	1½ 1¾	0 2 0	0 2 0	June 1875
200	Botallack, t, c, St. Just§	116 5 0	50	40 45	619 15 0	5 0 0	Aug. 1875
4000	Brookwood, c, Buckfastleigh	1 16 0	2½	2 2½	3 16 0	0 2 0	Nov. 1875
3348	Cargoll, s-l, Newlyn§	6 2 0	—		4 16 3	0 12 6	Oct. 1872
6400	Cashwell, l, Cumberland*	2 10 0	—		1 7 6	0 2 0	Aug. 1875
1000	Carn Brea, c, t, Illogan†	35 0 0	42	36 38	338 0 0	1 0 0	Feb. 1874
6000	Cath. & Jane, l,* Penrhyndendraeth	5 0 0	—		0 7 6	0 7 6	June 187[illegible]
2450	Cook's Kitchen, t, Illogan†§	22 9 9	5½	4 4½	11 17 0	0 7 6	Jan. 1873
10240	Devon Gt. Consols, c, Tavistock†* §	1 0 0	3½	3 3½	116 10 0	0 12 0	May 1875
4296	Dolcoath, c, t, Camborne	10 14 10	38	36 37	109 18 9	0 7 6	May 1876
6500	Drake Walls, t, c, Calstock	6 0 0	1¼	¾ 1	0 2 0	0 2 0	July 1874
15000	Duchess of Westminster,* l, Holywell	1 0 0	—		0 3 0	0 2 0	Feb. 1876
[illegible]	East Balleswidden, t, Sancreed*	1 0 0	—		0 2 11	0 0 5	Feb. 1874
6144	East Caradon, c, St. Cleer†	2 14 6	1½	1¼ 1¾	14 19 0	0 2 0	Oct. 1872
300	East Darren, l, Cardiganshire	32 0 0	—		234 10 0	1 0 0	May 1876
6400	East Pool, t, c, Illogan	0 9 9	13¼	13 13¼	14 12 3	0 2 6	May 1876
1906	East Wheal Lovell, t, Wendron*‡§	6 19 0	2½	2 2½	20 7 6	0 7 6	Oct. 1874
2800	Foxdale, l, Isle of Man*†	25 0 0	—		82 5 0	0 10 0	Feb. 1876
40000	Glasgow Cara., c* [30,000 £1 p., 10,000 15s. p.]		1½	1 1¼	0 11 10	0 2 0	Jan. 1876
15000	Great Dyliffe,* l, Montgomeryshire	4 0 0	5	4½ 5	0 2 6	0 2 6	Apr. 1876
[illegible]	Great Laxey, l, Isle of Man*	4 0 0	18	17 17½	19 13 0	0 10 0	Apr. 1876
615	Great Retallack, l, bl, Perranzabuloe	5 18 6	2	2 2½	0 1 6	0 1 6	May 1876
[illegible]	Great West Van, l, Cardigan*	2 0 0	⅝	½ ⅝	0 2 0	0 1 0	Aug. 1874
[illegible]	Great Wheal Vor, t, c, Helston†§	41 2 6	1½	1 1½	18 19 6	0 2 6	June 1872
6400	Green Hurth, l, Durham*	0 6 0	—		1 12 0	0 4 0	Oct. 1874
[illegible]	Grogwinion, l, Cardigan*	2 0 0	7	6 7	0 5 6	0 2 6	Jan. 1876
9830	Gunnislake (Clitters), t, c	5 5 0	3¼	3 3¼	0 10 9	0 2 0	Mar. 1876
1024	Herodsfoot, l, near Liskeard†	8 10 0	4½	4 4½	62 5 0	0 15 0	Oct. 1872
15000	Hingston Down, c, Calstock*† (£1 sh.)	2 5 0	⅝	⅝ ⅞	4 4 0	0 1 0	Nov. 1875
[illegible]	Killaloe, sl, Tipperary	1 0 0	—		0 3 11½	0 0 5	Mar. 1873
400	Lisburne, l, Cardiganshire	18 15 0	60	55 60	572 10 0	1 0 0	Mar. 1876
14000	Llanidloes,* l, Montgomery	3 0 0	3½	3 3½	7½ per cent.		Nov. 1875
6120	Lovell, t, Wendron	0 10 0	—		0 17 6	0 1 6	Jan. 1874
9000	Marke Valley, c, Caradon*	5 0 6	2¼	1¾ 2¼	7 15 0	0 2 0	Jan. 1876
11000	Melindur Valley, l, Cardigan*	3 0 0	—		0 7 2	0 3 7	Jan. 1875
9000	Minera Mining Co., l, Wrexham*	5 0 0	12	10 12	64 16 2	0 6 0	May 1876
20000	Mining Co. of Ireland, cl, c, l*	7 0 0	⅝	½ ⅝	23 11 6	0 3 6	Jan. 1876
512	North Busy, c, Chacewater	3 9 6	3½	2½ 3	0 10 0	0 10 0	Dec. 1875
12000	North Hendre, l, Wales	3 10 0	—		1 2 6	0 2 6	Nov. 1875
2000	North Levant, t, c, St. Just§	12 2 0	—		4 13 0	0 12 0	Sept. 1873
27855	Old Treburgett,* s-l, ordinary shares	1 0 0	—		0 0 9	0 0 9	Feb. 1874
9258	Old Treburgett,* s-l (10 per ct. pref.)	0 10 0	½	⅜ ½	0 1 4½	0 0 6	July 1874
5000	Penhalls, t, St. Agnes	3 0 0	2	1 1½	3 13 6	0 2 0	July 1875
45793	Penstruthal, t, c, Gwennap	2 0 0	½	⅝ ¾	0 2 8	0 0 8	Nov. 1875
6000	Phoenix, t, c, Linkinhorne§	4 13 4	—		39 19 10	0 4 0	Nov. 1875
18000	Prince Patrick,* s-l, Holywell	1 0 0	2¼	2 2¼	0 14 0	0 1 3	Jan. 1876
1120	Providence, t, Lelant§	17 16 7	2½	2 2½	104 12 6	0 10 0	Sept. 1872
12000	Roman Gravels, l, Salop*	7 10 0	15½	15 15½	6 4 6	0 8 6	May 1876
512	South Caradon, c, St. Cleer	1 5 0	120	110 120	728 0 0	2 0 0	May 1876
6123	South Condurrow, t, c, Camborne‡	6 5 6	5	3¾ 4¼	1 15 0	0 2 6	Feb. 1876
10000	So. Pr. Patrick,* s-l (8000 sh. issued)	1 0 0	—		0 7 0	0 1 0	Oct. 1875
12000	Tankerville, l, Salop*	6 0 0	11	10½ 11	4 7 0	0 5 0	May 1876
6000	Tincroft, c, t, Pool, Illogan†	9 0 0	19½	18 19	49 8 6	0 5 0	May 1876
15000	Van, l, Llanidloes*	4 5 0	39	37 39	17 9 6	0 16 0	Mar. 1876
3000	W. Chiverton, l, Perranzabuloe†	12 10 0	17	17 18	54 0 0	0 10 0	Apr. 1876
1783	West Poldice, St. Day	10 0 0	—		1 14 0	0 4 0	Feb. 1876
512	West Tolgus, c, Redruth	95 10 0	64	64 66	13 10 0	1 5 0	Apr. 1876
2048	West Wheal Frances, t, Illogan	27 3 9	7½	7 8	3 12 6	0 5 0	Oct. 1872
12000	West Wye Valley,* l, Montgomery	3 0 0	4¼	3¾ 4¼	0 3 0	0 3 0	May 1876
512	Wheal Basset, c, Illogan†§	11 2 6	13	10 11	638 10 0	1 10 0	Aug. 1872
2048	Wheal Jane, t, Kea	2 13 10	1¼	1 1¼	3 5 0	0 5 0	July 1875
4295	Wheal Kitty, t, St. Agnes	5 4 6	2¼	2 2½	11 19 6	0 2 6	Dec. 1874
80	Wheal Owles, t, St. Just§	86 5 0	135		522 10 0	4 0 0	Aug. 1872
6000	Wheal Prussia, t, Redruth	2 0 0	—		0 3 0	0 2 0	Dec. 1875
25000	Wicklow, c, sul, s, Wicklow	2 10 0	1⅓	1⅓ 1⅔	52 9 0	0 2 6	Mar. 1872
10000	Wye Valley, l, Montgomery*	3 0 0	7½	6½ 7½	0 6 0	0 3 0	Aug. 1875

FOREIGN DIVIDEND MINES.

Shares.	Mines.	Paid.	Last wk.	Clos. Pr.	Total divs.	Per share.	Last paid
35500	Alamillos, l, Spain*†	2 0 0	2½	2 2½	1 12 3	0 2 6	Mar. 1876
30000	Almada and Tirito Consol., s*†	1 0 0	⅓	¼ ⅓	0 6 3	0 1 0	May 1876
20000	Australian, c, South Australia†	7 7 6	2	1½ 2	0 15 6	0 2 0	July 1875
10000	Battle Mountain,* c, (6240 part pd.)	5 0 0	1	¾ 1	0 10 0	0 10 0	Nov. 1872
15000	Birdseye Creek, g, California*	4 0 0	1½	1½ 1¾	0 14 0	0 2 6	June 1874
6000	Bensberg, l, Germany*	10 0 0	2	1½ 2	0 17 4	0 8 0	July 1873
12320	Burra Burra,* c, So. Australia	5 0 0	—		70 0 0	0 10 0	Oct. 1872
20000	Cape Copper Mining,*† So. Africa	7 0 0	41	38 40	23 15 0	1 0 0	Mar. 1876
40000	Cedar Creek, g, California*	5 0 0	¾	½ ¾	0 5 0	0 2 6	June 1873
30000	Central American Association*†	0 13 6	—		0 6 0	0 1 0	July 1869
15000	Chicago, s, Utah*	10 0 0	6¼	6 6¼	2 0 0	0 4 0	May 1876
21000	Colorado Terrible, s-l, Colorado*†	5 0 0	1½	1¼ 1¾	0 13 6	0 4 0	Jan. 1875
10000	Copiapo, c, Chili* (£20 shares)	16 15 0	—		7 8 5	0 2 6	Jan. 1876
00000	Don Pedro North del Rey*†	0 16 0	⅓	¼ ⅓	2 5 9	0 2 0	Mar. 1872
23500	Eberhardt and Aurora, s, Nevada*†	10 0 0	8	7½ 8	1 0 0	1 0 0	July 1871
50000	Emma,* g, s, Utah	20 0 0	1¼	¾ 1	3 12 0	0 6 0	Dec. 1872
70000	English and Australian, c† S. Aust.	2 10 0	1⅓	1⅓ 1⅔	2 18 9	0 2 0	Mar. 1876
15000	Ferguson, g, California*	2 0 0	—		0 3 0	0 3 0	April 1872
30000	Flagstaff, s, Utah*	10 0 0	2½	2 2¼	4 2 0	0 5 0	July 1873
25000	Fortuna, l, Spain*†	2 0 0	5¾	5½ 6	5 8 10	0 8 0	Mar. 1876
30000	Gold Run, hyd.	1 0 0	¾	½ ¾	0 2 4	0 0 4	Oct. 1872
68000	Kapunda Mining Co. Australia†	1 3 0	—		0 2 4	0 0 6	June 1873
20000	Last Chance, s,* Utah	5 0 0	1	¾ ¾	0 14 0	0 2 0	July 1873
15000	Linares, l, Spain*†	3 0 0	5¾	5½ 6	15 14 2	0 10 0	Mar. 1876
65000	London and California, g*†	2 0 0	⅓	⅛ ⅓	0 1 0	0 1 0	July 1875
7837	Lusitanian, Portugal*† (£5 shares)	3 10 0	1½	1 1½	1 11 6	0 1 6	Mar. 1873
5000	Mammoth Copperopolis of Utah, c, s	10 0 0	—		0 5 0	0 5 0	Dec. 1872
5000	Mountain Chief, s, Utah*	10 0 0	—		0 4 0	0 4 0	Jan. 1873
18000	Prussian Mining & Ironworks, cl, i.	30 0 0	—		6 0 0	3 0 0	July 1873
10000	Pontgibaud, s-l, France†	20 0 0	19	17 19	20 14 2	1 3 2	Nov. 1875
100000	Port Phillip, g, Clunes*†	1 0 0	⅓	¼ ⅓	1 8 0	0 1 0	Jan. 1872
54000	Richmond Consols, s, Nevada*†	5 0 0	8¾	8 8¾	2 14 0	0 7 6	May 1875
40000	Santa Barbara,* g, Brazil	0 10 0	2	1½ 1¾	0 1 3	0 1 3	Apr. 1876
120000	Scottish Australian Mining Co.*†	1 0 0	1⅝	1¼ 1½	15 per cent.		May 1876
80000	Scottish Austral. Mining Co., New	0 5 0	⅝	¼ ½	15 per cent.		May 1876
112500	Sierra Buttes, g, California*†	2 0 0	1½	1 1½	1 14 0	0 2 0	Apr. 1876
60000	South Aurora, s, Nevada*	5 0 0	½	¼ ½	0 14 2	0 2 0	Nov. 1872
£253000	St. John del Rey*† (£5 stock and multiples dealt in)			330 350	½ year...25 p. ct. for Dec.		1875
15000	Sweetland Creek, g, California*†	4 0 0	1⅞	1¾ 2	3 6 0	0 2 0	Mar. 1876
20000	Tolima, g, s* So. America	5 0 0	3¼	3 3¼	0 11 6	0 6 6	May 1874
15000	Western Andes, s,* New Granada	5 0 0	5½		2 6 7	0 3 3	Apr. 1876

NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Paid.	Last Pr.	Clos. Pr.	Last Call.
20000	Anglo-Australian, g, Victoria*	2 10 0	—		Sept. 1872
5000	Anguilla Phosphate, West Indies (4000 issued)	10 0 0	—		Fully pd.
12000	Argentine, g, Argentine Republic	5 0 0	6½	5½ 6	Fully pd.
10000	Australian Central, g* (also 6000 deferred shares)	1 0 0	—		Fully pd.
3000	Bellavista, s, Peru* (£10 shares)	10 0 0	—		Fully pd.
30000	Blue Tent, hyd., California	5 0 0	3¼	3¼ 3½	Fully pd.
50000	Braganza, g, Brazil*†	0 15 0	—		Oct. 1870
12000	Camp Floyd, s, Utah*	10 0 0	—		Fully pd.
35000	Cesena Sulphur Company, Romanga, Italy*	10 0 0	—		Fully pd.
50152	Chontales, g, s, Nicaragua*† (and 12,542 of £1 15s.)	2 0 0	½	¼ ⅜	Fully pd.
6000	Clifton, s, Colorado*	5 0 0	—		Feb. 1872
16000	Condes of Chili, s-l	5 0 0	6½	6 6½	Fully pd.
10000	Crescent, g, Plumas County, California*	10 0 0	—		Fully pd.
85000	Excelsior Hydraulic Gold Washing Co., California*	6 0 0	—		Dec. 1871
100000	Exchequer, g, s, California*†	1 0 0	2⅛	2 2⅛	Fully pd.
55000	Frontino and Bolivia, g, New Granada*†	2 0 0	2⅓	2⅛ 2⅜	Fully pd.
40000	Holcombe Valley, g,* California	1 0 0	—		July 1872
6000	Hornachos,* s-l, (£10 shares) Spain	10 0 0	14	13 15	Jan. 1874
20000	Imperial Brazilian Collieries, Brazil*	5 0 0	—		Fully pd.
100000	I. X. L., g, s, California*	1 0 0	1⅛	1 1¼	Fully pd.
50000	Javali, g, Nicaragua*	2 0 0	⅜	¼ ⅜	Fully pd.
12000	Lanestosa,* l, z, Viscaya, Spain (£2 shares)	1 15 0	—		Mar. 1876
75000	Malabar, g, Colombia* (65000 issued)	1 0 0	—		Fully pd.
40000	Malpaso, g, Colombia* (10000 pref. shares, fully paid)	1 0 0	—		Fully pd.
12000	Menzenberg, c, Honnef, Germany*	5 5 0	—		Fully pd.
6000	Monte Loreto, g, c, Italy*	5 0 0	—		Fully pd.
66000	New Quebrada, c, Venezuela*	5 0 0	—		Fully pd.
60000	New Rosario, s, Mexico*	5 0 0	3¼	3½ 3¾	Fully pd.
20000	New Zealand Kapanga, g, Coromandel*	1 0 0	—		Fully pd.
3000	Oregon,* g, Oregon, U.S. (preference shares)	5 0 0	¾	½ ¾	Fully pd.
60000	Panulcillo, c, Chili*† (£80000 debentures)	4 0 0	4¼	4 4¼	Sept. 1875
80000	Pestarena United, g, Italy*†	4 0 0	2¼	2 2¼	Fully pd.
80000	Rica, g, Colombia* (40000 issued)	3 0 0	⅜	⅓ ⅜	Fully pd.
£2,141,000	Rio Tinto,* c, Huelva, Spain	1 0 0	—		Fully pd.
1[illegible]0000	Rossa Grande, g, Brazil*† (£1 shares)	Stock	58	56 57	Fully pd.
30000	Russia Copper, Orenburg and Ufa*†	0 19 0	⅛	⅛	July 1872
25000	San Pedro, c, Chili*	10 0 0	2	2½ 3	Fully pd.
10000	Silver Plume, s, Colorado*	2 0 0	2	1⅛ 1⅝	Fully pd.
37500	Snowdrift, s, Colorado*	1 0 0	—		Fully pd.
30000	Tecoma, s, Utah*	2 0 0	—		Fully pd.
20000	Thornhill Reef, g, Australia*	10 0 0	¾	½ ¾	Fully pd.
43174	United Mexican, s, Mexico*†‡	1 0 0	¼	⅛ ¼	Fully pd.
14000	Utah, g, s-l, Utah*	26 15 3	2⅓	2 2⅓	May 1875
25000	Victoria (London)*, g, Australia (25,000 sh. 16s. pd.)	6 0 0	—		Fully pd.
75000	Yorke Peninsula, c, South Australia	1 0 0	—		Fully pd.
40000	Yorke Peninsula, c, South Australia Preference	1 0 0	½	¼ ½	Fully pd.
		1 0 0	1	¾ 1	Fully pd.

§ Have made calls since last dividend was paid.

FOREIGN AND MISCELLANEOUS STOCKS, BONDS, LOANS, AND TRUSTS.

	Closing Prices.	
Argentine, 1868, 6 per cent.	61	63
Bolivia, 6 per cent.	17	19
Brazilian, 1865, 5 per cent.	91	93
Chilian, 1866, 7 per cent.	100	104
City of Providence, 5 p.c. coupon bonds	95	97
Egyptian, 1862, 7 per cent.	34	37
Do., 1868, 7 per cent.	35	37
Do., [illegible] per cent., V.M.L.	34	39
Do., 9 per cent. guar.	38	41
Do., 7 per cent., K.M.L.	33	35

	Closing Prices.	
Foreign and Col. Gov. Trust, 6 p. cent.	75	85
Do., 5 per cent., 2d issue	58	68
Do., 6 per cent., 3d issue	65	70
Do., 1872, 4th issue	65	70
Do., 1873, 5th issue	[illegible]	65
Peruvian, 1870, 6 per cent.	18½	19½
Do. 1872, 5 per cent.	13½	14½
Russian, 5½ per cent. L. Mort.	83	88
Spanish, Quicksilver Mort., 5 p. cent.	87	89
United States Mort., 6 per cent.	94	95

NON-DIVIDEND MINES.

Shares.	Mines.	Paid.	Last wk.	Clos. Pr.
40000	Aberdaunant, l, Llanidloes*	1 0 0	1⅜	1⅜ 1⅝
10000	Aberystwith,* s-l, Cardigan	5 0 0	—	
7800	Alvigg. & Burng.,* t, St. Aust. (£3 sh.)	1 10 0	1¼	1¼ 1¾
18000	Ambrose Lake, t, c, Liskeard	1 18 6	—	
12000	Assheton, l, Carnarvonshire*	5 0 0	1¾	1¼ 1½
50000	Ballycummisk,* c, Schull	2 0 0	—	
12000	Bedford United, c, Tavistock	1 17 6	1½	1 1½
28000	Belstone,* c, Devon (27,000 fully pd.)	1 0 0	3	2¾ 3
15000	Blaen United,* s-l, Cardigan	1 0 0	1⅛	⅞ 1⅛
15000	Blue Hills, t, c, St. Agnes	2 9 0	—	
2000	Bowden Hill,* mn	1 0 0	—	
20000	Brynambor, l, Cardigan	1 0 0	—	
4493	Bwadrain, s-l, Cardigan*	4 0 0	—	
4127	Bwlch Consols, s-l, Cardigan*‡	5 0 0	—	
40000	Caldbeck Fells, l, Cumberland*	2 0 0	—	
5584	Carn Camborne, c, t, Camborne	5 3 6	⅛	⅛ ¼
10000	Cathedral, t, c, Gwennap*	1 10 0	1⅜	1⅛ 1⅜
20000	Central Foxdale, l, Isle of Man* (£2 sh.)	1 0 0	—	
10000	Central Van,* l, bl, Llanidloes	5 0 0	—	
20000	Cwm Dwyfor,* c, s-l, Carnarvonshire	1 0 0	—	
15000	Cwm Nant Ddu,* l, Montgomery	1 0 0	—	
3000	Cwmystwith (New) [5l. shares]	4 0 0	—	
10000	Denbighshire Consolidated, l*	3 0 0	3	2 3
656	Ding Dong, t, Gulval	51 9 6	4	3½ 4
10000	Dubby Syke, l, Durham*	0 9 0	½	⅜ ½
10000	Duchy Great Consols, c, Calstock	5 0 0	—	
512	East Basset, c, Redruth†‡	77 7 6	2½	2 2½
800	East Black Craig,* l., Scotland	25 0 0	—	
4000	East Chiverton, l, Perranzabuloe	6 12 0	2¼	1¾ 2¼
6000	East Grenville, c, Camborne	7 8 6	—	
3000	E. Nant-y-mwyn,* l, Brecknockshire	1 0 0	⅜	¼ ⅜
6000	East Tywarnhaile, c, St. Agnes	0 10 0	4½	4½ 4¾
15000	East Van, l, Llanidloes*	5 0 0	10¼	9¾ 10¼
20000	Elgar,* s-l, Cardiganshire	1 0 0	1¼	1 1¼
12800	Florence and Tonkin United*	0 10 0	—	
5000	Frank Mills, l, Christow	5 6 0	⅝	½ ⅝
8000	Fronvellan, l, Mont.* [4000 sh. fy. pd.]	1 0 0	—	
3950	Gawton, c, Tavistock	4 6	⅝	⅜ ⅝
12000	Glan Clwyd,* l, Gwyddelwern	1 0 0	⅞	⅝ ⅞
10000	Glan Severn, s-l, Flintshire	1 0 0	—	
2000	Glenroy,* s-l, Isle of Man	4 0 0	7	6½ 7½
10000	Glyn,* l, Llanidloes	2 0 0	3½	2⅞ 3⅛
15000	Gobbett, t, Dartmoor	1 0 0	—	
12000	Goginan, and Level Newydd, Card., l	2 10 0	—	
100000	Gold, c, Merionethshire	1 0 0	—	
20000	Goren,* s-l, Carmarthen	1 0 0	—	
7500	Gorsedd and Merllyn Cons., Flint	2 10 0	3	2¼ 2¾
20000	Gt. East Foxdale, l, I. of Man (1l. sh.)	0 15 0	—	
9500	Great Pant-y-Pydew, l, Holywell	2 0 0	—	
15000	Grosvenor, l, Holywell (£1 sh.)	0 7 0	—	
10000	Harehope Gill,* l, Durham (£1 sh.)	0 3 6	—	
6400	Harwood,* l, Durham	0 15 0	1⅛	1 1⅛
6000	Keswick United, l*	5 0 0	—	
6000	Killifreth, t, Chacewater	1 8 0	1	⅞ 1
25000	Kingston Consols, s-l, Cornwall	1 0 0	⅝	½ ⅝
12000	Ladywell,* l, Salop	2 10 0	1½	1¼ 1¾
2500	Levant, c, t, St. Just	9 6 6	—	
64	Llandilo, s-l, bl, Flintshire	50 0 0	—	
15000	Llanlivery Cons., t, c, ars, Llanlivery	1 0 0	1¼	1¼
25000	Llanrhaiadr, l, Montgomery* (£2 sh.)	1 10 0	—	
30000	Llanrwst,* l, Carnarvon	2 0 0	3⅛	2⅞ 3⅛
15000	Llwyn Teify,* s-l, Cardigan	1 0 0	—	
6000	Medlyn Moor, t, Wendron	1 4 10	1½	1¼ 1½
10000	Mellanear Copper, Hayle*	2 0 0	—	
13000	Monydd Gorddu, l, Cardigan*	0 0	4	3½ 4
4000	Nanty, l, Montgomeryshire*	1 0 0	—	
25000	Nant-y-Ronen, s-l, Cardigan*	1 0 0	—	
12000	Neptune,* c, Perranuthnoe	0 5 0	—	
10000	New Beldon, l, Northumberland*	1 0 0	—	
3000	New Chiverton,* l, Perranzabuloe	6 0 0	6¼	6¼ 6½
10000	New Consols, c, Tavistock*	3 0 0	1	½ 1
8000	New Crickheath,* l, Shropshire	2 0 0	—	
8000	New Dolcoath, t, c, Camborne*	3 0 0	1½	1 1½
20000	New East Foxdale, s-l, Isle of Man	0 15 0	—	
16000	New Fowey Consols, t, St. Blazey*	3 0 0	2	1½ 2
2000	New Hendra, t, Breage	2 9 0	1¾	1 1¾
10000	New North Pool,* c, Illogan	3 0 0	—	
6400	New Pembroke, t, c, Par Station	5 8 0	⅜	⅛ ⅜
5000	New Rosewarne, c, Gwinear	5 12 0	¾	⅝ ¾
3200	New South Merllyn, l, Flint*	2 10 0	—	
4000	North Cornwall, l, Cornwall (£5 sh.)	3 0 0	3½	3 3½
17000	North Laxey,* Isle of Man	2 0 0	1½	1 1½
20000	North Prince Patrick,* l, Holywell	1 0 0	1¼	1 1¼
2000	North Wheal Towan, t, c, Illogan	1 19 6	—	
1000	North Rosewarne, c, Gwinear	6 12 6	—	
8000	North Treleigh Wood, t, Redruth*	1 0 0	1¼	1 1¼
5936	North Treskerby, c, St. Agnes	3 15 4	—	
6000	Old Talargoch, l, Flintshire*	2 0 0	—	
2500	Old Tincroft, c, t, Lelant*	4 0 0	4½	4¼ 4½
16923	Parys Mountain,* c, Anglesea	3 0 0	1	¾ ⅞
4000	Pateley Bridge, l, Yorkshire	5 0 0	4½	4 4½
9530	Pedn-an-drea, t, Redruth§	9 17 0	—	
6000	Pennant, l, bar, North Wales*	5 0 0	5½	5 5¼
12000	Pennerley, l, Shropshire*	2 0 0	3	2½ 3
12000	Plynlimmon, l, Llanidloes*	2 5 0	⅝	½ ⅝
648	Polrose, t, Breage	21 0 0	—	
10000	Port Nigel,* s-l, Carnarvonshire	2 0 0	2	1½ 2
2000	Prideaux Wood, t, Llanivery	5 0 0	—	
12800	Prince of Wales, c, Calstock‡	1 9 0	¼	⅛ ¼
6000	Relistian Consols, c, Gwinear	0 10 0	¾	⅝ ¾
15000	Rookhope, l, Durham*	1 10 0	1½	1 1½
5869	Rosewall Hill and Ransom, t	4 17 6	⅜	¼ ⅜
6000	Rosewarne United, c, t, Gwinear	1 10 0	—	
3000	Russell, s-l, Swymbridge	0 6 0	—	
5000	Silvercross,* c, t, Marazion	1 0 0	1½	1 1½
4200	Snowbrook, s-l, Montgomery	5 0 0	—	
12000	South Bwadrain, s-l, Llanbadarnfawr	0 10 0	—	
5000	South Carn Brea, c, t, Illogan	2 17 0	1½	1¼ 1½
6000	South Cwmystwith, l, Cardiganshire	0 10 0	2½	2 2½
6000	South Darren, l, Cardigan*	1 10 0	—	
512	South Dolcoath, c, t, Redruth	12 5 0	1½	1 1½
12000	South Lisburne, l, bl, Cardigan*	0 12 6	—	
18000	South Roman Gravels, l*	1 10 0	1½	1 1½
6000	South Roskear, t, c, Camborne	6 10 0	5	4 5
6000	South Tolcarne, t, c, Camborne	1 9 0	⅓	¼ ⅓
12000	South Van,* l, Montgomeryshire	1 0 0	—	
3000	South Ward, l, Beerferris	5 8 0	1⅛	⅞ 1⅛
937	South Wheal Crofty, c, Illogan	36 0 10		
4500	South Wh. Frances, c, Illogan†	6 8 4	1¼	1¼ 1½
432	Spearn Moor, t, Penzance‡	46 17 9	—	
14000	St. Blazey t.* (£2 10s. shares)	2 0 0	—	
6000	St. Lawrence, Amal., l, Flintshire*	2 0 0	—	
12000	St. Harmon,* l, Montgom	3 0 0	3½	3¼ 3¾
10000	St. Patrick, l, Halkin, Holywell*	1 0 0	1½	1¼ 1½
6000	Success, &c., l, Derb. (12,000l. called)	1 0 0	—	
16000	Sunnyside,* l, Durham	2 0 0	3½	3 3½
30000	Talybont,* s-l, Talybont	1 0 0	1	⅞ 1
6400	Teesdale,* l, Durham	0 18 0	2½	2 2½
14000	Teign Valley, l, bar., Bridford	1 0 0	—	
10000	Temple, l, Cardigan*	1 0 0	2¼	2 2¼
12000	Trebeigh Consols, s-l, St. Ive	0 4 0	½	⅜ ½
5000	Treleigh Wood, t, Redruth	5 11 0	—	
547	Treiyon Consols	15 0 0	⅝	½ ⅝
12000	Trethellan, s-l, Crantock*	2 0 0	—	
4000	Trumpet Consols, t, Helston§	[illegible] 0 0	—	
5174	Unity Wood, t, c, Kenwyn	3 18 0	2	1¾ 2
20000	Van Consols, l, Llanidloes*	2 10 0	2½	1¾ 2
1000	Vaughan, s-l, Cardigan	10 0 0	—	
12000	West Assheton, l, Carnarvon	1 0 0	2¼	1¾ 2
6000	West Basset, c, Illogan†‡	5 6 8	5½	5 5½
20000	West Bryn Celyn,* l, Flintshire	1 0 0	—	
3000	West Craven Moor, l, Pateley Bridge*	10 0 0	—	
12000	West Esgair Lle, l, Card.*	2 0 0	⅝	½ ⅝
5000	West Godolphin, t, c, Breage	1 13 6	1¾	1¼ 1¾
12000	West Goginan,* Cardiganshire	2 0 0	2½	2 2½
15000	West Great Work, t, Breage*	1 0 0	1	¾ 1
10000	West Llangynog, s-l, Montgomery	2 0 0	—	
12000	West Maria & Fortescue, t, c, Lamer.	4 12 6	⅜	¼ ⅜
3000	West Mary Ann, l, Menheniot	0 3 6	¾	⅛ ¾
50000	West Minwr, s-l, Flint	1 0 0	—	
12000	West Pant-y-Go, s-l, Flint*	1 0 0	—	
4000	West Pateley Bridge, l, Yorkshire	5 0 0	5½	5 5½
8000	West Phoenix, t, Linkinhorne	0 18 0	—	
1403	West Polbreen, t, St. Agnes	3 5 0	—	
10000	West Roskear, t, s-l, bl, c, Camborne	0 12 0	3	2½ 3
12000	West Tankerville, l, Salop*	3 0 0	2¼	1¾ 2
6000	West Wheal Gorland, t, c	4 0 0	—	
3000	West Wheal Peevor, t, Redruth	0 10 0	—	
600	West Wheal Seton, c, Camborne†	40 0 0	33	25 30
6000	Wheal Agar, c, Illogan	11 10 0	3	2½ 3
6000	Wheal Argus, l, Sancreed	0 10 0	—	
2500	Wheal Arthur, t, c, Calstock	1 0 0	—	
741	Wheal Basset and Grylls, t	9 18 6	—	
6000	Wheal Coates, t, St. Agnes	2 0 0	—	
6000	Wheal Crebor, c, Tavistock	4 1 0	2½	2 2¼
8400	Wheal Emma, t, c, Buckfastleigh	1 10 0	—	
5179	Wheal Grenville, c, Camborne*	11 11 6	1¼	1¼ 1½
[illegible]	Wh. Mary Hutchings,* t, Plympton	1 14 0	—	
8000	Wheal Peevor, t, Redruth	6 1 0	2¼	2¼ 2⅝
4096	Wheal Uny, t, c, Redruth	13 6 6	1½	1⅛ 1¼

IRON AND COAL COMPANIES.

Shares.	Company.	Paid.	Prices.
£100	Abbot, John, and Co. [L.]	£75 0 0	[illegible]
15	Albion Steel and Wire Co. [L.]	12 10 0	[illegible]
5	Alltami Colliery Co. [L.]	5 0 0	[illegible]
100	Ashbury Co. [L.]	90 0 0	[illegible]
10	Bagnall, John, and Sons [L.]	10 0 0	[illegible]
10	Benhar Coal Co. [L.]	10 0 0	[illegible]
50	Bilbao Iron Ore Co. [L.]	50 0 0	[illegible]
10	Bilson & Crump Meadow Coll. Co. [L.]	10 0 0	[illegible]
4	Blaen Cwmbach Coal Co. [L.]	4 0 0	[illegible]
50	Blaenavon Iron and Steel Co. [L.]	50 0 0	[illegible]
100	Bolckow, Vaughan, and Co. [L.]...A	40 0 0	[illegible]
50	Bowling Iron Co. [L.]	50 0 0	[illegible]
50	Britannia Ironworks [L.]	25 0 0	[illegible]
50	Brown, Bailey, and Dixon [L.]	40 0 0	[illegible]
100	Brown, John, and Co. [L.]	70 0 0	[illegible]
5	Cakemore Colliery Co. [L.]	5 0 0	[illegible]
100	Cammell and Co. [L.]	80 0 0	[illegible]
20	Cannock and Huntington Coal [L.]	2 0 0	[illegible]
10	Cardiff & Swansea St. Coal Co. [L.]	8 0 0	[illegible]
10	Cardigan Steel and Wire Co. [L.]	7 10 0	[illegible]
10	Central Swedish Iron and Steel [L.]	10 0 0	[illegible]
5	Chapel House Colliery	5 0 0	[illegible]
50	Charlton Iron Co. [L.]	40 0 0	[illegible]
50	Chatterley Iron Co. [L.]	40 0 0	[illegible]
10	Chillington Iron Co. [L.]	10 0 0	[illegible]
1	Clee Hill Colliery Co. [L.]	1 0 0	[illegible]
10	Consett Iron Co. [L.]	7 10 0	[illegible]
1	Consett Spanish Ore [L.]	1 0 0	[illegible]
50	Cooke, William, and Co. [L.]	30 0 0	[illegible]
20	Darlington Iron Co. [L.]	1 0 0	[illegible]
50	Davy Brothers [L.]	22 10 0	[illegible]
5	Diamond Fuel Co. [L.]	4 10 0	[illegible]
32	Ebbw Vale Co. [L.]	29 0 0	[illegible]
100	Fox, Samuel, and Co. [L.]	80 0 0	[illegible]
10	General Mining Ass. [L.] (£1 returned)	9 0 0	[illegible]
20	Great Western Coal Co. [L.]	17 0 0	[illegible]
2	Gwyngwillim Colliery Co. [L.]	2 0 0	[illegible]
15	Hopkins, Gilkes, and Co. [L.]	11 0 0	[illegible]
10	Ifton Rhyn Colliery Co. [L.]	10 0 0	[illegible]
50	Knowles, Andrew, and Sons [L.]	17 0 0	[illegible]
10	Llay Hall Coal, Iron, & Firebrick [L.]	10 0 0	[illegible]
5	Littledean Woodside Coll. Co. [L.]	5 0 0	[illegible]
50	Llynvi, Ogmore, & Tondu Co. [L.]	50 0 0	[illegible]
10	Lydney and Wigpool Iron Ore [L.]	7 5 0	[illegible]
10	Marbella Iron Ore Co. [L.]	10 0 0	[illegible]
6	Mersey Steel and Iron Co. [L.]	5 0 0	[illegible]
10	Midland Iron Co. [L.]	5 0 0	[illegible]
5	Mold Argoed Colliery Co. [L.]	5 0 0	[illegible]
10	Monkland Iron and Coal Co. [L.]	10 0 0	[illegible]
4	Mwyndy Iron Ore [L.]	3 10 0	[illegible]
100	Nant-y-Glo and Blaina (8 p.c. pref.)	100 0 0	[illegible]
1	Nerbudda Coal and Iron	0 8 0	[illegible]
20	New Sharlston Collieries [L.] Pref.	20 0 0	[illegible]
10	Newport Abercarn Coal Co. [L.]	8 0 0	[illegible]
10	Northmptn. Coal, Iron & Wagon [L.]	8 0 0	[illegible]
10	Northfield Iron Co. [L.]	8 0 0	[illegible]
1	Norton Green Coal Co. [L.]	1 0 0	[illegible]
35	Palmer's Shipbuilding and Iron [L.]	35 0 0	[illegible]
100	Parkgate Iron Co. [L.]	65 0 0	[illegible]
20	Patent Nut and Bolt Co. [L.]	14 0 0	[illegible]
20	Patent Shaft and Axletree [L.]	10 0 0	[illegible]
20	Pelsall Coal and Iron [L.]	15 0 0	[illegible]
50	Phoenix Bessemer Co. [L.]	40 0 0	[illegible]
50	Rhymney Iron Co. [L.]	50 0 0	[illegible]
100	Sandwell Park Colliery Co. [L.]	100 0 0	[illegible]
50	Ditto New	10 0 0	[illegible]
50	Shotts Iron Co. [L.]	50 0 0	[illegible]
100	Sheepbridge Iron and Coal [L.]	55 0 0	[illegible]
50	Silkstone & Dodworth Cl. & Iron [L.]	27 0 0	[illegible]
20	Skerne Ironworks [L.]	20 0 0	[illegible]
50	Somorrostro Iron Co. [L.]	50 0 0	[illegible]
20	South Wales Coal Co. [L.]	17 0 0	[illegible]
100	Staveley Iron and Coal Co. [L.]	60 0 0	[illegible]
100	Ditto ditto New	10 0 0	[illegible]
20	South Cleveland Ironworks [L.]	20 0 0	[illegible]
10	Swansea Valley Steam Coll. Co. [L.]	6 0 0	[illegible]
100	Thames Iron Company	100 0 0	[illegible]
50	Tredegar Iron and Coal Co. [L.]	12 0 0	[illegible]
25	Ditto B. shares	25 0 0	[illegible]
20	Ulverston Mining Co. [L.]	12 0 0	[illegible]
1	United Bituminous Collieries [L.]	1 0 0	[illegible]
10	Vancouver Coal [L.]	6 0 0	[illegible]
100	Vickers, Sons, & Co. [L.] 6 p.c. deb.	100 0 0	[illegible]
50	Welsh Ironworks Co. [L.]	50 0 0	[illegible]
25	W. Cumberland I. and Steel [L.]	20 0 0	[illegible]
10	West Mostyn Coal [L.] (12 p.c. pref.)	5 0 0	[illegible]
5	West Swansea Colliery Co. [L.]	5 0 0	[illegible]
10	Whitehaven Iron Co. [L.]	10 0 0	[illegible]
100	Wigan and Whiston Coal Co. [L.]	70 0 0	[illegible]
100	Wigan Coal and Iron Co. [L.]	75 0 0	[illegible]

WAGON COMPANIES.

Shares.	Company.	Paid.	Prices.
10	Birmingham Wagon Co. [L.]	10 0 0	[illegible]
20	British Wagon Co. [L.]	10 0 0	[illegible]
20	Sheffield Wagon Co. [L.]	15 0 0	[illegible]
10	Yorkshire Wagon Co. [L.]	10 0 0	[illegible]

TELEGRAPH COMPANIES.

Shares.	Company.	Paid.	Prices.
"St."	Anglo-American	100 0 0	[illegible]
10	Brazilian Submarine	10 0 0	[illegible]
20	Direct United States Cable	20 0 0	[illegible]
10	Eastern	10 0 0	[illegible]
10	East. Exten., Australia and China	10 0 0	[illegible]
10	Great Northern	10 0 0	[illegible]
25	Indo-European	25 0 0	[illegible]
10	Mediterranean Extension	10 0 0	[illegible]
8	Reuters	8 0 0	[illegible]
Stk.	Submarine	100 0 0	[illegible]
10	West India and Panama	10 0 0	[illegible]
20	Western and Brazilian	20 0 0	[illegible]
$1000	Western Union, 7 per cent. Mort. Bonds	$1000	[illegible]

MISCELLANEOUS.

Shares.	Company.	Paid.	Prices.
Stk.	Atlantic and Great Western Leased Lines, Rental Trust	100 0 0	[illegible]
25	Austral. Mort. Land and Finance [L.]	5 0 0	[illegible]
25	Australian Agricultural	21 10 0	[illegible]
10	Avonside Engine [L.]	7 0 0	[illegible]
Stk.	Baltimore and Ohio, 6 per cent.	100 0 0	[illegible]
Stk.	Cent. of New Jersey Con. Mort.	100 0 0	[illegible]
Stk.	Cent. Pacific of Calif., 1st Mort. 6 p.c.	100 0 0	[illegible]
25	City of London Real Property [L.]	12 0 0	[illegible]
25	Copper Miners of Eng. (7 p.c. pref.)	25 0 0	[illegible]
5	Credit Foncier of England [L.]	5 0 0	[illegible]
5	Diamond Rock Boring	4 10 0	[illegible]
15	English and Foreign Credit	8 0 0	[illegible]
15	Foster, Porter, and Co. [L.]	10 10 0	[illegible]
5	Gen. Phos. & Chem. Works Co. [L.]	5 0 0	[illegible]
1	Glaisdale Whinstone Quarry	1 0 0	[illegible]
17	Hudson's Bay Company	17 0 0	[illegible]
10	Huntington Copper and Sul. Co.	9 0 0	[illegible]
Stk.	Illinois Central, $100 shares	100 0 0	[illegible]
Stk.	Illinois & St. Louis Bridge, 1st Mort.	100 0 0	[illegible]
Stk.	Ditto, 2nd Mort., 7 per cent.	100 0 0	[illegible]
Stk.	Illinois Cent. Sinking Fund, 5 p. cent.	100 0 0	[illegible]
Stk.	Ditto, 6 per cent.	100 0 0	[illegible]
7½	Imperial Credit [L.]	7 10 0	[illegible]
—	Ditto, Surplus Certificate	—	[illegible]
Stk.	Lehigh Val. Con. Mort., A, 6. p. cent.	100 0 0	[illegible]
10	Milner's Safe [L.]	10 0 0	[illegible]
25	National Discount [L.]	5 0 0	[illegible]
Stk.	N. Cent. Rail. Con. Mort., 6 per cent.	10 0 0	[illegible]
5	Patent Gunpowder Company	5 0 0	[illegible]
50	Peninsular and Oriental Steam	50 0 0	[illegible]
Stk.	Pennsyl. Gen. Mort. 6 p. cent., 1910.	100 0 0	[illegible]
Stk.	Ditto, Con. Sink. Fund, 6 p. ct., 1905	100 0 0	[illegible]
Stk.	Scottish Aust. Investment Company.	100 0 0	[illegible]
Stk.	Ditto, 6 per cent. Preference	100 0 0	[illegible]
10	Silber Light (ord. sh.)	10 0 0	[illegible]
20	Suez Canal shares	20 0 0	[illegible]
12	Telegraph Construc. & Mainte. [L.]	12 0 0	[illegible]
5	Ditto, Second Bonus Three per Cents	5 0 0	[illegible]
10	Tharsis Sulphur and Copper Co.	10 0 0	[illegible]
Stk.	Union Pacific Land Grant, 1st Mort.	100 0 0	[illegible]
Stk.	Union Pacific Railway, 1st Mort.	100 0 0	[illegible]

b, blende; cl, coal; c, copper; g, gold; l, lead; s, silver; sl, slate; s-l, silver-lead; t, tin; z, zinc.
* Limited Liability Companies; † quoted on the Stock Exchange; ‡ have paid dividends.

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